```
LLL                 IIIIIIIII     NNN         NNN  KKK         KKK  EEEEEEEEEEEEEEE   RRRRRRRRRRR
LLL                 IIIIIIIII     NNN         NNN  KKK         KKK  EEEEEEEEEEEEEEE   RRRRRRRRRRR
LLL                 IIIIIIIII     NNN         NNN  KKK         KKK  EEEEEEEEEEEEEEE   RRRRRRRRRRR
LLL                    III        NNN         NNN  KKK         KKK  EEE               RRR         RRR
LLL                    III        NNN         NNN  KKK         KKK  EEE               RRR         RRR
LLL                    III        NNN         NNN  KKK         KKK  EEE               RRR         RRR
LLL                    III        NNNNNN      NNN  KKK       KKK    EEE               RRR         RRR
LLL                    III        NNNNNN      NNN  KKK       KKK    EEE               RRR         RRR
LLL                    III        NNNNNN      NNN  KKK       KKK    EEE               RRR         RRR
LLL                    III        NNN   NNN   NNN  KKKKKKKKK        EEEEEEEEEEE       RRRRRRRRRRR
LLL                    III        NNN   NNN   NNN  KKKKKKKKK        EEEEEEEEEEE       RRRRRRRRRRR
LLL                    III        NNN   NNN   NNN  KKKKKKKKK        EEEEEEEEEEE       RRRRRRRRRRR
LLL                    III        NNN      NNNNNN  KKK       KKK    EEE               RRR   RRR
LLL                    III        NNN      NNNNNN  KKK       KKK    EEE               RRR   RRR
LLL                    III        NNN      NNNNNN  KKK       KKK    EEE               RRR   RRR
LLL                    III        NNN         NNN  KKK         KKK  EEE               RRR      RRR
LLL                    III        NNN         NNN  KKK         KKK  EEE               RRR      RRR
LLL                    III        NNN         NNN  KKK         KKK  EEE               RRR      RRR
LLLLLLLLLLLLLLLL    IIIIIIIII     NNN         NNN  KKK         KKK  EEEEEEEEEEEEEEE   RRR         RRR
LLLLLLLLLLLLLLLL    IIIIIIIII     NNN         NNN  KKK         KKK  EEEEEEEEEEEEEEE   RRR         RRR
LLLLLLLLLLLLLLLL    IIIIIIIII     NNN         NNN  KKK         KKK  EEEEEEEEEEEEEEE   RRR         RRR
```

FILEID**LNKMAPRTN

```
LL          NN      NN  KK      KK  MM      MM    AAAAAA    PPPPPPPP    RRRRRRRR    TTTTTTTTTT  NN      NN
LL          NN      NN  KK      KK  MM      MM    AAAAAA    PPPPPPPP    RRRRRRRR    TTTTTTTTTT  NN      NN
LL          NN      NN  KK      KK  MMMM  MMMM  AA      AA  PP      PP  RR      RR      TT      NN      NN
LL          NN      NN  KK      KK  MMMM  MMMM  AA      AA  PP      PP  RR      RR      TT      NN      NN
LL          NNNN    NN  KK    KK    MM  MM  MM  AA      AA  PP      PP  RR      RR      TT      NNNN    NN
LL          NNNN    NN  KK    KK    MM  MM  MM  AA      AA  PP      PP  RR      RR      TT      NNNN    NN
LL          NN  NN  NN  KKKKKK      MM      MM  AA      AA  PPPPPPPP    RRRRRRRR        TT      NN  NN  NN
LL          NN  NN  NN  KKKKKK      MM      MM  AA      AA  PPPPPPPP    RRRRRRRR        TT      NN  NN  NN
LL          NN    NNNN  KK    KK    MM      MM  AAAAAAAAAA  PP          RR  RR          TT      NN    NNNN
LL          NN    NNNN  KK    KK    MM      MM  AAAAAAAAAA  PP          RR  RR          TT      NN    NNNN
LL          NN      NN  KK      KK  MM      MM  AA      AA  PP          RR    RR        TT      NN      NN      ....
LL          NN      NN  KK      KK  MM      MM  AA      AA  PP          RR    RR        TT      NN      NN      ....
LLLLLLLLLL  NN      NN  KK      KK  MM      MM  AA      AA  PP          RR      RR      TT      NN      NN      ....
LLLLLLLLLL  NN      NN  KK      KK  MM      MM  AA      AA  PP          RR      RR      TT      NN      NN      ....

LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

```
;  1     0001  0 module lnk_maproutines                    ! LINKER MAP ROUTINES
;  2     0002  0                 (ident = 'V04-000'
;  3     0003  0                 ,addressing_mode
;  4     0004  0                         (external    = general
;  5     0005  0                         ,nonexternal = long_relative
;  6     0006  0                         )
;  7     0007  0                 ) =
;  8     0008  1 begin
;  9     0009  1 !
; 10     0010  1 !**************************************************************************
; 11     0011  1 !*                                                                        *
; 12     0012  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                               *
; 13     0013  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                 *
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; 29     0029  1 !*                                                                        *
; 30     0030  1 !*                                                                        *
; 31     0031  1 !**************************************************************************
; 32     0032  1
; 33     0033  1 !++
; 34     0034  1 ! FACILITY:     LINKER
; 35     0035  1 !
; 36     0036  1 ! ABSTRACT:     PRODUCES THE MAP
; 37     0037  1 !
; 38     0038  1 ! ENVIRONMENT:
; 39     0039  1 !
; 40     0040  1 ! AUTHOR: K.D. MORSE, CREATION DATE: 27-MAR-77
; 41     0041  1 !
; 42     0042  1 ! MODIFIED BY:
; 43     0043  1 !
; 44     0044  1 !       V03-007 ADE0004         Alan D. Eldridge        22-Jun-1984
; 45     0045  1 !               Adhere to Grammer Rules for output file spec's as defined
; 46     0046  1 !               in the Command Language User's Guide.
; 47     0047  1 !
; 48     0048  1 !       V03-006 ADE0003         Alan D. Eldridge        29-Apr-1984
; 49     0049  1 !               Don't suppress zero lengthed PSECT's from the Program
; 50     0050  1 !               Section Synopsis.
; 51     0051  1 !
; 52     0052  1 !       V03-005 ADE0002         Alan D. Eldridge        12-Apr-1984
; 53     0053  1 !               Use 'output file parse' option only if /MAP was not
; 54     0054  1 !               a command qualifier.
; 55     0055  1 !
; 56     0056  1 !       V03-004 ADE0001         Alan D. Eldridge         5-Mar-1984
; 57     0057  1 !               Call LIB$TRIM_FILESPEC to appropiately trim file names.
```

```
;    58          0058  1 !
;    59          0059  1 !       V03-003 JWT0113         Jim Teague              20-Apr-1983
;    60          0060  1 !               Call $getjpi to get number of open files left.
;    61          0061  1 !
;    62          0062  1 !       V03-002 JWT0044         Jim Teague              30-Jul-1982
;    63          0063  1 !               Open file performance boost.
;    64          0064  1 !
;    65          0065  1 !       V03-001 JWT0038         Jim Teague              23-Jun-1982
;    66          0066  1 !               Clean up INFO#212 errors.
;    67          0067  1 !
;    68          0068  1 !--
;    69          0069  1
;    70          0070  1 !++
;    71          0071  1 !
;    72          0072  1 ! MODULE DESCRIPTION:
;    73          0073  1 !
;    74          0074  1 ! THIS MODULE CONTAINS ALL THE ROUTINES NEEDED TO CREATE A MAP FOR THE
;    75          0075  1 ! LINKER.  THERE IS A GLOBAL ROUTINE TO PRODUCE EACH SECTION OF
;    76          0076  1 ! THE MAP AND SEVERAL LOCAL SUBROUTINES TO HANDLE THE ACTUAL OUTPUT.
;    77          0077  1 !
;    78          0078  1 ! THE CALLING SEQUENCES OF THE GLOBAL ROUTINES ARE:
;    79          0079  1 !       LNK$MAPINIT()
;    80          0080  1 !       LNK$MAPMHD(OBJREC,OBJMODDSC)
;    81          0081  1 !       LNK$MAPLNG(LANGADDR,LANGLEN)
;    82          0082  1 !       LNK$MAPADROMD()
;    83          0083  1 !       LNK$MAPPSCTS()
;    84          0084  1 !       LNK$MAPSYMS()
;    85          0085  1 !       LNK$MAPISCTS()
;    86          0086  1 !       LNK$MAPOUT(LINEADDR,COUNT)
;    87          0087  1 !
;    88          0088  1 ! WHERE:
;    89          0089  1 !
;    90          0090  1 !       OBJREC IS THE ADDRESS OF A MODULE HEADER RECORD (SEE OBJFMT)
;    91          0091  1 !       OBJMODDSC IS THE ADDRESS OF AN OBJECT MODULE DESCRIPTOR (SEE DATBAS)
;    92          0092  1 !       LANGADDR IS THE ADDRESS OF THE LANGUAGE PROCESSOR SUB-HEADER RECORD
;    93          0093  1 !       LANGLEN IS THE LENGTH OF THE LANGUAGE PROCESSOR NAME
;    94          0094  1 !       LINEADDR IS THE ADDRESS OF A LINE TO BE OUTPUT TO THE MAP (E.G. ERROR MESSAGES)
;    95          0095  1 !       COUNT IS THE NUMBER OF BYTES IN THE OUTPUT LINE
;    96          0096  1 !
;    97          0097  1 !--
```

```
;   99          0098  1 !
;  100          0099  1 ! TABLE OF CONTENTS:
;  101          0100  1 !
;  102          0101  1 forward routine
;  103          0102  1     crferror            : novalue,          ! CALLED BY CREF ON ERRORS
;  104          0103  1     faofail             : novalue,          ! HANDLES FAILURES FROM FAO
;  105          0104  1     trimfail            : novalue,          ! HANDLES FAIURES FROM LIB$TRIM_FILESPEC
;  106          0105  1     lnk$mapinit         : novalue,          ! INITIALIZE MAP FILE
;  107          0106  1     lnk$closmapfil      : novalue,          ! CLOSE THE MAP FILE
;  108          0107  1     mapfail             : novalue,          ! MAP I/O FAILURE ROUTINE
;  109          0108  1     lnk$mapmhd          : novalue,          ! CREATE OBJECT MODULE LINE
;  110          0109  1     lnk$maplng          : novalue,          ! INSERT CREATOR IN MHD LINE
;  111          0110  1     lnk$mapadromd       : novalue,          ! LIST MODULES CONTAINING ADDRESS DATA
;  112          0111  1     lnk$mappscts        : novalue,          ! CREATE THE PSECT MAP SECTION
;  113          0112  1     lnk$mapsyms         : novalue,          ! CREATE ALL MAP SECTIONS FOR SYMBOLS
;  114          0113  1     lnk$mapiscts        : novalue,          ! CREATE THE IMAGE SECTION SYNOPSIS
;  115          0114  1     lnk$mapstats        : novalue,          ! OUTPUT LINKER'S RUN STATISTICS
;  116          0115  1     mapbox,                                 ! OUTPUT A HEADER IN A BOX
;  117          0116  1     lnk$mapout,                             ! OUTPUT ONE LINE ALREADY FORMATTED
;  118          0117  1     lnk$crfout,                             ! OUTPUT CROSS REF LINE
;  119          0118  1     mapsubhdr,                              ! CREATE A NEW SUBHEADER LINE AND OUTPUT IT
;  120          0119  1     newpage,                                ! OUTPUT NEW PAGE, HEADER, AND SUB-HEADER
;  121          0120  1     newline;                                ! OUTPUT BLANK LINE
;  122          0121  1 !
;  123          0122  1 ! INCLUDE FILES:
;  124          0123  1 !
;  125          0124  1 library 'LIB$L32';                          ! SYSTEM STRUCTURE DEFINITIONS
;  126          0125  1 require 'PREFIX';                           ! GET GENERAL DEFINITIONS
;  127          0240  1 library 'DATBAS';                           ! GET BASIC DATA BASE DEFINITIONS
;  128          0241  1 require 'ISGENC';                           ! GET OBJECT LANGUAGE RECORD FORMAT ANE ISD LAYOUT
;  129          0625  1 require 'CRFMDL';                           ! CREF FIELD DEFINITIONS
;  130          0694  1
;  131          0695  1 !
;  132          0696  1 ! EQUATED SYMBOLS:
;  133          0697  1 !
;  134          0698  1 global literal
;  135          0699  1     len$c_mapline = 132,                    ! LENGTH OF LINES ON THE MAP
;  136          0700  1     len$c_lngnam  =  30;                    ! MAXIMUM LENGTH OF MODULE CREATOR NAME
;  137          0701  1
;  138          0702  1 literal
;  139          0703  1     date_fld_lng  = 17,                     ! LENGTH OF DATE FIELD IN OBJ MOD HDR REC
;  140          0704  1     maj_ident_lng =  2,                     ! LENGTH OF MAJOR IDENT
;  141          0705  1     min_ident_lng =  2,                     ! LENGTH OF MINOR IDENT
;  142          0706  1     max_k_rmsmbc  =  8,                     ! MAXIMUM NUMBER FOR RMS BLOCKING
;  143          0707  1     boxlines      =  3 ;                    ! NUMBER OF LINES IN BOX HEADINGS
;  144          0708  1
;  145          0709  1 !
;  146          0710  1 ! OWN STORAGE:
;  147          0711  1 !
;  148          0712  1 psect
;  149          0713  1     own = $plit$(nopic, concatenate, local, noshare, noexecute, nowrite);
;  150          0714  1
;  151          0715  1 own
;  152          0716  1 !
;  153          0717  1 ! FAO CONTROL STRINGS
;  154          0718  1 !
;  155          0719  1     contrbstr       : descriptor ('!16AC!15AC!3(9XL) (!11UL.) !5AC!1ZB'),       ! PSECT CONTRIBUTION
```

```
;  156          0720  1      contrbst1       : descriptor ('!31AC!3(9XL) (!11UL.) !5AC!1ZB'),
;  157          0721  1      contrbst2       : descriptor ('!16AC!39AC'),
;  158          0722  1      contrbst3       : descriptor ('!31AC!3(9XL) (!11UL.) !5AC!1ZB'),
;  159          0723  1      psc_cntrl_str   : descriptor ('!16AC!15AC!3(9XL) (!11UL.) !5AC!ZB !10(AC)'),
;  160          0724  1      psc_cntrl_st1   : descriptor ('!31AC!3(9XL) (!11UL.) !5AC!ZB !10(AC)'),
;  161          0725  1      hdr_cntrl_str   : descriptor ('!64AS!25<!17%D!>!33<VAX-11 Linker V!AD-!AD!>Page!5UL'),
;  162          0726  1                                                                          ! MAP PAGE HEADING
;  163          0727  1      ff_cntrl_str    : descriptor ('!^'),                                 ! NEW PAGE
;  164          0728  1      objmd_cntrl_str : descriptor ('!16AC!15AC!10UL !37AD!19AD'),         ! OBJ MOD SECTION
;  165          0729  1      objmd_cntrl_st1 : descriptor ('!31AC'),
;  166          0730  1      objmd_cntrl_st2 : descriptor ('!31AC!10UL !37AD!19AD'),
;  167          0731  1      creat_cntrl_str : descriptor ('!AD'),                                ! CREATOR OF MODULE
;  168          0732  1      omdadrstr       : descriptor ('!33AC!8UL  '),                        ! MODULE .ADDRESS COUNT
;  169          0733  1      abbrvtbl1_str   : descriptor ('!_!_+!18*-+'),
;  170          0734  1      abbrvtbl2_str   : descriptor ('!-!-!!!AC!!'),
;  171          0735  1      isect_cntrl_str : descriptor ('!16AC!4UB!6UW  !2AC!8XL!2AC!9UL!4UB !AC !AC !AC'),
;  172        P 0736  1      gblis_cntrl_str : descriptor (
;  173          0737  1                        '!16AC!4UB!6UW  !2AC!8XL!2AC!9UL!4UB!28< !AC !AC !AC!>!16AC !12AC !6UB  !8UL'),
;  174          0738  1 !
;  175          0739  1 ! FAO CONTROL STRINGS FOR LINK-WIDE SYNOPSIS
;  176          0740  1 !
;  177          0741  1      virmemline      : descriptor ('!49<Virtual memory allocated:!>!3(9XL) (!UL. byte!%S, !UL. page!%S)'),
;  178          0742  1      stackline       : descriptor ('!50<Stack size:!>!8UW. page!%S'),
;  179          0743  1      mapformat       : descriptor ('!50<Map format:!>!AC!ACin file !AD'),
;  180          0744  1      maplength       : descriptor ('!50<Estimated map length:!>!UL. blocks'),
;  181          0745  1      imghdrblkline   : descriptor ('!50<Image header virtual block limits:!>!8UL.!9UW. (!5UW. block!%S)'),
;  182          0746  1      imgbinblkline   : descriptor ('!50<Image binary virtual block limits:!>!8UL.!9UL. (!5UW. block!%S)'),
;  183          0747  1      identline       : descriptor ('!50<Image name and identification:!>!AC !AC'),
;  184          0748  1      nfilline        : descriptor ('!50<Number of files:!>!8UW.'),
;  185          0749  1      nmodline        : descriptor ('!50<Number of modules:!>!8UW.'),
;  186          0750  1      npscline        : descriptor ('!50<Number of program sections:!>!8UW.'),     ! NO. OF P-SECTS IN LINK
;  187          0751  1      nsymline        : descriptor ('!50<Number of global symbols:!>!8UW.'),       ! NO. OF GLOBAL SYMBOLS
;  188          0752  1      nundfline       : descriptor ('!50<Including undefined count of:!>!8UW.'),  ! NO. OF UNDEFINED SYMBOLS
;  189          0753  1      ncrosrefs       : descriptor ('!50<Number of cross references:!>!8UW.'),
;  190          0754  1      niscline        : descriptor ('!50<Number of image sections:!>!8UW.'),      ! NO. OF IMAGE SECTIONS
;  191          0755  1      nadrefline      : descriptor ('!50<Number of address fixups:!>!8UL.'),      ! NO. OF .ADDRESSES FIXED UP
;  192          0756  1      nshrsymline     : descriptor ('!50<Number of code references to shareable images:!>!8UL.'),
;  193          0757  1      dbgtfrline      : descriptor ('!50<Debugger transfer address:!>!8XL'),      ! DEBUGGER TRANSFER ADDRESS
;  194          0758  1      otstfrline      : descriptor ('!50<OTS transfer address - !AC:!>!8XL'),     ! OTS TRANSFER ADDRESS
;  195          0759  1      usrtfrline      : descriptor ('!50<User transfer address:!>!8XL'),          ! USER TRANSFER ADDRESS
;  196          0760  1      imgatrline      : descriptor ('!50<Image type:!>!AC.'),                     ! IMAGE ATTRIBUTES LINE
;  197        P 0761  1      imgshrline      : descriptor (                                              ! IMAGE ATTRIBUTES LINE
;  198          0762  1                        '!50<Image type:!>!AC!AC. Global Section Match=!AC, Ident, Major=!UB, Minor=!UL') ;
;  199          0763  1
;  200          0764  1 bind
;  201          0765  1      alignbyte   = cstring ('BYTE '),                                       ! BYTE ALIGNMENT ASCIC STRING
;  202          0766  1      alignword   = cstring ('WORD '),                                       ! WORD ALIGNMENT ASCIC STRING
;  203          0767  1      alignlong   = cstring ('LONG '),                                       ! LONGWORD ALIGNMENT ASCIC STRING
;  204          0768  1      alignquad   = cstring ('QUAD '),                                       ! QUADWORD ALIGNMENT ASCIC STRING
;  205          0769  1      align2      = cstring ('2 ** '),                                       ! OTHER ALIGNMENT ASCIC STRING
;  206          0770  1      alignpage   = cstring ('PAGE '),                                       ! PAGE ALIGNMENT ASCIC STRING
;  207          0771  1      blanks      = cstring ('  '),                                        ! ASCIC STRING OF SPACE
;  208          0772  1      hyphens     = cstring ('-'),                                         ! ASCIC STRING OF HYPHENS
;  209          0773  1      hyphen_r    = cstring ('-R'),                                        ! ASCIC STRING OF HYPHEN AND "R"
;  210          0774  1      p_hyphen    = cstring ('P-'),                                        ! TO INDICATE SECTION IS PROTECTED
;  211          0775  1      pic         = cstring ('  PIC,'),                                    ! PIC ATTRIBUTE ASCIC STRING
;  212          0776  1      lib         = cstring ('LIB,'),                                      ! LIB ATTRIBUTE ASCIC STRING
```

```
;  213          0777  1      ovr          = cstring ('OVR,'),                                  ! OVR ATTRIBUTE ASCIC STRING
;  214          0778  1      rel          = cstring ('REL,'),                                  ! REL ATTRIBUTE ASCIC STRING
;  215          0779  1      gbl          = cstring ('GBL,'),                                  ! GBL ATTRIBUTE ASCIC STRING
;  216          0780  1      vec          = cstring ('  VEC'),                                 ! VECTOR PSECT
;  217          0781  1      shr          = cstring ('  SHR,'),                               ! SHR ATTRIBUTE ASCIC STRING
;  218          0782  1      exe          = cstring ('  EXE,'),                               ! EXE ATTRIBUTE ASCIC STRING
;  219          0783  1      rd           = cstring ('  RD,'),                                ! RD ATTRIBUTE ASCIC STRING
;  220          0784  1      wrt          = cstring ('  WRT,'),                               ! WRITEABLE
;  221          0785  1      nopic        = cstring ('NOPIC,'),                                ! WRT ATTRIBUTE ASCIC STRING
;  222          0786  1      usr          = cstring ('USR,'),                                  ! USR ATTRIBUTE ASCIC STRING
;  223          0787  1      con          = cstring ('CON,'),                                  ! CON ATTRIBUTE ASCIC STRING
;  224          0788  1      abs          = cstring ('ABS,'),                                  ! ABS ATTRIBUTE ASCIC STRING
;  225          0789  1      lcl          = cstring ('LCL,'),                                  ! LCL ATTRIBUTE ASCIC STRING
;  226          0790  1      novec        = cstring ('NOVEC'),                                 ! NOT VECTOR PSECT
;  227          0791  1      noshr        = cstring ('NOSHR,'),                                ! NOSHR ATTRIBUTE ASCIC STRING
;  228          0792  1      noexe        = cstring ('NOEXE,'),                                ! NOEXE ATTRIBUTE ASCIC STRING
;  229          0793  1      nord         = cstring ('NORD,'),                                 ! NORD ATTRIBUTE ASCIC STRING
;  230          0794  1      nowrt        = cstring ('NOWRT,'),                                ! NOT WRITEABLE
;  231          0795  1      exeimage     = cstring ('EXECUTABLE'),                            ! EXECUTABLE IMAGE
;  232          0796  1      sysimage     = cstring ('SYSTEM'),                                ! SYSTEM IMAGE
;  233          0797  1      shrimage     = cstring ('  SHAREABLE'),                           ! AND LINKABLE IMAGE
;  234          0798  1      briefmap     = cstring ('BRIEF'),                                 ! BRIEF MAP FORMAT
;  235          0799  1      alltime      = cstring ('ALWAYS'),                                ! GS MATCH = ALWAYS
;  236          0800  1      never        = cstring ('NEVER'),                                 ! GS MATCH = NEVER
;  237          0801  1      equal        = cstring ('EQUAL'),                                 ! GS MATCH = EQUAL
;  238          0802  1      lssequal     = cstring ('LESS/EQUAL'),                            ! GS MATCH = LESS/EQUAL
;  239          0803  1      defaultmap   = cstring ('DEFAULT'),                               ! DEFAULT FORMAT
;  240          0804  1      longmap      = cstring ('FULL'),                                  ! LONG FORMAT
;  241          0805  1      crefmap      = cstring (' WITH CROSS REFERENCE '),                ! WITH CROSS REFERENCES
;  242          0806  1      readwrite    = cstring ('READ WRITE'),
;  243          0807  1      readonly     = cstring ('READ ONLY'),
;  244          0808  1      demandzero   = cstring ('DEMAND ZERO'),
;  245          0809  1      copyonref    = cstring ('COPY ON REF'),
;  246          0810  1      addrdata     = cstring ('NON-SHAREABLE ADDRESS DATA'),
;  247          0811  1      fixupsection= cstring ('FIXUP VECTORS'),
;  248          0812  1      chardef_str = cstring ('      Key for special characters above:') : vector [, byte],
;  249          0813  1      undef_str    = cstring (' *  - Undefined   '),
;  250          0814  1      univ_str     = cstring (' U  - Universal   '),
;  251          0815  1      ext_str      = cstring (' X  - External    '),
;  252          0816  1      reloc_str    = cstring (' R  - Relocatable '),
;  253          0817  1      weak_str     = cstring (' WK - Weak        '),
;  254          0818  1      protect_str = cstring (' P  - Protected   '),
;  255          0819  1      str_pointer = uplit  (long  (undef_str
;  256          0820  1                                  ,univ_str
;  257          0821  1                                  ,reloc_str
;  258          0822  1                                  ,ext_str
;  259          0823  1                                  ,weak_str))    : vector [, long],
;  260          0824  1      istr_pointer = uplit (long (reloc_str,
;  261          0825  1                                  protect_str)) : vector [, long],
;  262          0826  1  !
;  263          0827  1  ! BOXED HEADERS
;  264          0828  1  !
;  265          0829  1      imagesections = cstring ('! Image Section Synopsis !'),      ! IMAGE SECTION HEADER
;  266          0830  1      psecthdr     = cstring ('! Program Section Synopsis !'),     ! PSECT SECTION HEADER
;  267          0831  1      objmodhdr    = cstring ('! Object Module Synopsis !'),       ! OBJECT MODULE SECTION HEADER
;  268          0832  1      omdadrhdr    = cstring ('! Module Relocatable Reference Synopsis !'), ! COUNT OF .ADDRESSES IN A MODULE
;  269          0833  1      linkwidehdr = cstring ('! Image Synopsis !'),                ! LINK-WIDE INFORMATION HEADER
```

```
;  270          0834  1      symbyname   = cstring ('! Symbols By Name !'),                ! SYMBOL TABLE
;  271          0835  1      symbolcref  = cstring ('! Symbol Cross Reference !'),         ! WITH CROSS REFERENCE
;  272          0836  1      symbyvalue  = cstring ('! Symbols By Value !'),               ! SYMBOL TABLE PRINTED BY VALUES
;  273          0837  1      linkstats   = cstring ('! Link Run Statistics !') ;           ! STATISTICS OF THE RUN
;  274          0838  1
;  275          0839  1  !
;  276          0840  1  ! SUB-HEADERS
;  277          0841  1  !
;  278          0842  1
;  279          0843  1  own
;  280          0844  1      psectsubhdr : vector [4]
;  281          0845  1        initial
;  282        P 0846  1          (stringdesc
;  283          0847  1              ('!16<Psect Name!>!18<Module Name!>!9<Base!>!14<End!>!18<Length!>!22<Align!>Attributes')
;  284        P 0848  1          ,stringdesc
;  285          0849  1              ('!16<!10*-!>!18<!11*-!>!9<!4*-!>!14<!3*-!>!18<!6*-!>!22<!5*-!>!10*-')
;  286          0850  1          ),
;  287          0851  1  !
;  288          0852  1      objmodsubhdr : vector [4]
;  289          0853  1        initial
;  290        P 0854  1          (stringdesc
;  291          0855  1              ('!16<Module Name!>!19<Ident!>!11<Bytes!>!36<File!>!19<Creation Date!>Creator')
;  292        P 0856  1          ,stringdesc
;  293          0857  1              ('!16<!11*-!>!19<!5*-!>!11<!5*-!>!36<!5*-!>!19<!13*-!>!7*-')
;  294          0858  1          ),
;  295          0859  1      omdadrsubhdr : vector [4]
;  296          0860  1        initial
;  297        P 0861  1          (stringdesc
;  298        P 0862  1              (
;  299        P 0863  1          '!33<Module Name!>!8<  Number!>  !33<Module Name!>!8<  Number!>  !33<Module Name!>!8<  Number!>'
;  300          0864  1              )
;  301        P 0865  1          ,stringdesc
;  302          0866  1              ('!33<!11*-!>!8<  !6*-!>  !33<!11*-!>!8<  !6*-!>  !33<!11*-!>!8<  !6*-!>')
;  303          0867  1          ),
;  304          0868  1  !
;  305          0869  1      crfsubhd1      : descriptor ('<Symbol!>!16<Value!>!'),
;  306          0870  1      crfsubhd2      : descriptor ('<Defined By!>Referenced By ...'),
;  307          0871  1      crfsubhd3      : descriptor ('<!6*-!>!16<!5*-!>!'),
;  308          0872  1      crfsubhd4      : descriptor ('<!10*-!>!17*-'),
;  309          0873  1      fao_crefsubhd : descriptor ('!!!UL!AS!UL!AS'),       !FAO CONTROL STRING TO CREATE CRF SUB HEADER
;  310          0874  1      fao_cre1       : descriptor ('!!!ULAC'),             !FAO CONTROL STRING TO CREATE FAO CONTROL STRING
;  311          0875  1  !
;  312          0876  1      symsubhdr : vector [4]
;  313          0877  1        initial
;  314        P 0878  1          (stringdesc
;  315          0879  1              ('!16<Symbol!>!19<Value!>!16<Symbol!>!19<Value!>!16<Symbol!>!19<Value!>!16<Symbol!>Value')
;  316        P 0880  1          ,stringdesc
;  317          0881  1              ('!16<!6*-!>!19<!5*-!>!16<!6*-!>!19<!5*-!>!16<!6*-!>!19<!5*-!>!16<!6*-!>!5*-')
;  318          0882  1          ),
;  319          0883  1  !
;  320          0884  1  ! SYMBOL TABLE SUB-HEADER USED IF LONG SYMBOL NAME SEEN
;  321          0885  1  !
;  322          0886  1      symlngsubhdr : vector [4]
;  323          0887  1        initial
;  324        P 0888  1          (stringdesc
;  325          0889  1              ('!32<Symbol!>!12<Value!>!32<Symbol!>!12<Value!>!32<Symbol!>!12<Value!>')
;  326        P 0890  1          ,stringdesc
```

```
;  327          0891  1              ('!32<!6*-!>!12<!5*-!>!32<!6*-!>!12<!5*-!>!32<!6*-!>!12<!5*-!>')
;  328          0892  1          ),
;  329          0893  1 !
;  330          0894  1      valsubhdr : vector [4]
;  331          0895  1        initial
;  332        P 0896  1          (stringdesc
;  333          0897  1              ('!40<Value!>Symbols...'),stringdesc('!40<!5*-!>!10*-')
;  334          0898  1          ),
;  335          0899  1 !
;  336          0900  1      isdsubhdr : vector [4]
;  337          0901  1        initial
;  338        P 0902  1          (stringdesc
;  339        P 0903  1              (
;  340        P 0904  1     '!16<   Cluster!>!5<Type!>!8<Pages!>!51<!AC!>!16<Global Sec. Name!>!12<   Match!> Majorid   Minorid'
;  341          0905  1              )
;  342        P 0906  1          ,stringdesc
;  343          0907  1              ('!16<   !7*-!>!5<!4*-!>!8<!5*-!>!9*-  !8*- !3*- !27<!21*-!>!16*-!12<   !5*-!> !7*-   !7*-')
;  344          0908  1          ) ;
;  345          0909  1
;  346          0910  1 psect
;  347          0911  1      own = $own$(nopic, concatenate, local, noshare, noexecute, write) ;
;  348          0912  1 !
;  349          0913  1 ! READ/WRITE OWN STORAGE
;  350          0914  1 !
;  351          0915  1 own
;  352          0916  1 !
;  353          0917  1 ! BUFFERS AND DESCRIPTORS
;  354          0918  1 !
;  355          0919  1      alignment,                                              ! ADDRESS OF ALIGNMENT DESCRIPTION
;  356          0920  1      outline     : ch$sequence [len$c_mapline],              ! OUTPUT LINE BUFFER
;  357          0921  1      outdes      : vector [2] initial (len$c_mapline, outline), ! OUTPUT LINE DESCRIPTOR
;  358          0922  1      outsize     : word,                                     ! SIZE OF OUTPUT STRING
;  359          0923  1      args        : vector [10],                              ! FAO ARGUMENTS
;  360          0924  1      linecnt,                                                ! NUMBER OF LINES OUTPUT ON CURRENT PAGE
;  361          0925  1      pagenum,                                                ! NEXT PAGE NUMBER
;  362          0926  1      subhdline,                                              ! ADDR OF SUB-HEADER LINE DESCRIPTOR
;  363          0927  1      crfsubhdr   : block [dsc$c_s_bln*2, byte],
;  364          0928  1      fao_sym     : block [8, byte],
;  365          0929  1      fao_symdesc : block [dsc$c_s_bln, byte] initial (8, fao_sym),
;  366          0930  1      fao_mod     : block [8, byte],
;  367          0931  1      fao_modesc  : block [dsc$c_s_bln, byte] initial (8, fao_mod);
;  368          0932  1
;  369          0933  1 bind
;  370          0934  1      isdtxt = cstring ('Base Addr  Disk VBN PFC Protection and Paging');
;  371          0935  1
;  372          0936  1 !
;  373          0937  1 ! EXTERNAL REFERENCES:
;  374          0938  1 !
;  375          0939  1
;  376          0940  1 external routine
;  377          0941  1      lnk$closefile       : novalue,                          ! ROUTINE TO CLOSE A FILE
;  378          0942  1      crf$out,                                                ! CROSS REFERENCE AND SYMBOL TABLE OUTPUT
;  379          0943  1      sys$fao,                                                ! FORMATTED ASCII OUTPUT
;  380          0944  1      lnk$filnamdsc,                                          ! RETURN FILE NAME FROM FAB
;  381          0945  1      lib$traverse_tree,                                      ! TRAVERSE BINARY TREE
;  382          0946  1      lib$lp_lines,                                           ! DETERMINE NUMBER OF LINES PER PAGE
;  383          0947  1      lib$trim_filespec,                                      ! TRIMS FILE SPEC
```

```
;  384          0948  1      sys$gettim,                                    ! GETS CURRENT TIME FROM SYSTEM
;  385          0949  1      lnk$statsout;                                  ! DOES ALL THE WORK
;  386          0950  1
;  387          0951  1  external literal
;  388          0952  1      lin$_crferr,                                   ! CROSS REFERENCE ERROR
;  389          0953  1      lin$_closeout,                                 ! CLOSE ERROR MESSAGE
;  390          0954  1      lin$_faofail,                                  ! FAILURE RETURN FROM FAO
;  391          0955  1      lin$_openout,                                  ! ERROR OPENING OUTPUT FILE
;  392          0956  1      lin$_writeerr;                                 ! ERROR MESSAGE CODE FOR PUT FAILURE
;  393          0957  1
;  394          0958  1  external
;  395          0959  1      lnk$gl_filesleft,
;  396          0960  1      lnk$gt_jpilst,
;  397          0961  1      lnk$gl_omdadrlst,                              ! LIST HEAD OF OBJ MODULES WITH ADDRESS DATA
;  398          0962  1      lnk$gl_nadromd,                                ! NUMBER OF OBJECT MODULES WITH ADDRESS DATA
;  399          0963  1      lnk$gl_matchid,                                ! PNTR TO GLOB SEC ID
;  400          0964  1      lnk$gb_matchctl     : block [, byte],          ! GLOB SEC MATCH CTL FLG
;  401          0965  1      lnk$gl_inrelnam,                               ! NAM BLOCK FOR FIRST INPUT FILE
;  402          0966  1      lnk$gl_relnam_map,                             ! NAM BLOCK OF INPUT FILE ASSOC. WITH /MAP
;  403          0967  1      lnk$gb_locnov_map   : byte,                    ! SET IF /MAP WAS 'LOCAL' WITHOUT A VALUE
;  404          0968  1      lnk$gl_ctlmsk       : block [, byte],          ! CONTROL BIT MASK LONGWORD
;  405          0969  1      lnk$gl_curfil       : ref block [, byte],      ! CURRENT FILE DESCRIPTOR
;  406          0970  1      lnk$gl_imgfil       : ref block [, byte],      ! IMAGE FILE DESCRIPTOR
;  407          0971  1      lnk$gl_mapfil       : ref block [, byte],      ! MAP FILE DESCRIPTOR
;  408          0972  1      lnk$gl_errlist,                                ! LIST HEAD OF NON-MODULE ERRORS
;  409          0973  1      lnk$gq_startim,                                ! STARTING DATE AND TIME
;  410          0974  1      lnk$aw_version      : block [lid$c_size, byte],! VERSION OF LINKER
;  411          0975  1      lnk$gw_hdrblks      : word,                    ! NUMBER OF IMAGE HEADER BLOCKS
;  412          0976  1      lnk$gw_imgblks      : word,                    ! NUMBER OF IMAGE BINARY BLOCKS
;  413          0977  1      lnk$gl_curclu       : ref block [, byte],      ! CURRENT CLUSTER DESCRIPTOR
;  414          0978  1      lnk$gl_fixisd       : ref block [, byte],      ! ADDRESS OF FIXUP ISECT DESCRIPTOR
;  415          0979  1      lnk$gl_clulst,                                 ! CLUSTR LISTHEAD
;  416          0980  1      lnk$gl_maplst,                                 ! LIST OF P-SECTIONS FOR MAP
;  417          0981  1      lnk$gl_maxva,                                  ! MAXIMUM VIRTUAL ADDRESS ALLOCATED
;  418          0982  1      lnk$gl_minva,                                  ! MINIMUM
;  419          0983  1      lnk$gl_adrefs,                                 ! NUMBER OF .ADDRESS FIXUPS
;  420          0984  1      lnk$gl_shrsyms,                                ! NUMBER REFERENCES TO SHAREABLE IMAGE SYMBOLS
;  421          0985  1      lnk$gw_stack        : word,                    ! SIZE OF STACK
;  422          0986  1      lnk$gw_nfiles       : word,                    ! NUMBER OF FILES IN LINK
;  423          0987  1      lnk$gw_nmodules     : word,                    ! NUMBER OF MODULES IN LINK
;  424          0988  1      lnk$gw_npsects      : word,                    ! NUMBER OF P-SECTS IN LINK
;  425          0989  1      lnk$gw_nsymbols     : word,                    ! NUMBER OF SYMBOLS IN LINK
;  426          0990  1      lnk$gw_ncrosrfs     : word,                    ! NUMBER OF SYMBOL CROSS REFERENCES
;  427          0991  1      lnk$gw_nudfsyms     : word,                    ! NUMBER OF UNDEFINED SYMBOLS
;  428          0992  1      lnk$gl_tfradr       : long,                    ! USER TRANSFER ADDRESS
;  429          0993  1      lnk$gl_dbgtfr       : long,                    ! DEBUGGER TRANSFER ADDRESS
;  430          0994  1      lnk$gl_otsepdsc     : ref block [, byte],      ! SYMBOL TABLE ENTRY FOR OTS RESERVED SYMBOL
;  431          0995  1      lnk$gw_nisects      : word,                    ! NUMBER OF IMAGE SECTIONS
;  432          0996  1      lnk$gl_tfrpsc       : long,                    ! PSECT DEFINING USER TRANSFER ADDRESS
;  433          0997  1      lnk$gl_dbgtfps      : long,                    ! PSECT DEFINING DEBUGGER TRANSFER ADDRESS
;  434          0998  1      lnk$gt_imgnam       : vector [, byte],         ! IMAGE NAME STRING
;  435          0999  1      lnk$gt_imgid        : vector [, byte];         ! IMAGE ID STRING
;  436          1000  1
;  437          1001  1  own
;  438          1002  1      lastomd             : ref block [, byte],                    ! POINTER TO LAST OBJ MODULE DESCRIPTOR
;  439          1003  1      mapestim,                                                    ! ESTIMATE OF MAP LENGTH
;  440          1004  1      imagefilename       : descriptor ('No image file created'),  ! STRING TO PRINT WHEN THERE
```

```
;  441          1005  1
;  442          1006  1      psectnameline,                                  ! WAS NO IMAGE CREATED
;  443          1007  1      auxfnb              : ref block [, byte],       ! 0 OR POINTER TO PSECT SYNOPSIS LINE
;  444          1008  1      rmserror,                                       ! PTR TO FILE'S AUXILIARY FILENAME BLOCK
;  445          1009  1      maprab              : $rab (rac = seq, rop = wbh), ! ERROR CODE RETURNED BY RMS
;  446          1010  1      mapifi              : word,                     ! SEQUENTIAL
;  447        P 1011  1      symbolfield         : $crffield (fao_string = '!15AC',  ! SAVED INTERNAL IDENT FOR CLOSE
;  448          1012  1                                    field_width = 15),  ! THE KEY 1 FIELD IS THE
;  449          1013  1      symbolend           : $crffieldend,             ! SYMBOL
;  450        P 1014  1      spacefield          : $crffield (fao_string = ' ',  ! SPACES BETWEEN SYMBOL AND VALUE
;  451          1015  1                                    field_width = 1),
;  452          1016  1      spaceend            : $crffieldend,
;  453        P 1017  1      valuefield          : $crffield (fao_string = '!XL',  ! HEX LONGWORD VALUE
;  454          1018  1                                    field_width = 8),
;  455          1019  1      valueend            : $crffieldend,
;  456        P 1020  1      valueflags          : $crffield (fao_string = '!3* ',  ! DEFAULT SUFFIX
;  457          1021  1                                    field_width = 3),   ! WHEN NONE OF FOLLOWING APPLIES
;  458        P 1022  1      reloc_suf           : $crffield (bit_mask = gsy$m_rel,  ! RELOCATABLE ONLY
;  459        P 1023  1                                    fao_string = '-R ',  ! SUFFIX
;  460          1024  1                                    field_width = 3),
;  461        P 1025  1      univ_suf            : $crffield (bit_mask = gsy$m_uni,  ! SUFFIX ON UNIVERSAL
;  462        P 1026  1                                    fao_string = '-U ',
;  463          1027  1                                    field_width = 3),
;  464        P 1028  1      rel_uni_suf         : $crffield (bit_mask =         ! SUFFIX ON RELOCATABLE
;  465        P 1029  1                                     (gsy$m_uni or gsy$m_rel),  AND UNIVERSAL
;  466        P 1030  1                                     fao_string = '-RU',
;  467          1031  1                                     field_width = 3),
;  468        P 1032  1      ext_suf             : $crffield (bit_mask = sym$m_gref,  ! EXTERNAL SYMBOL, NOT RELOCATABLE
;  469        P 1033  1                                    fao_string = '-X ',
;  470          1034  1                                    field_width = 3),
;  471        P 1035  1      rel_ext_suf         : $crffield (bit_mask =         ! RELOCATABLE EXTERNAL SYMBOL
;  472        P 1036  1                                     (gsy$m_rel or sym$m_gref),
;  473        P 1037  1                                    fao_string = '-RX',
;  474          1038  1                                    field_width = 3),
;  475        P 1039  1      undef_suf           : $crffield (bit_mask = gsy$m_def,  ! SUFFIX ON UNDEFINED
;  476        P 1040  1                                    set_clear = 0,      ! SYMBOL VALUES
;  477        P 1041  1                                    fao_string = '-* ',
;  478          1042  1                                    field_width = 3),
;  479          1043  1      valflgsend          : $crffieldend,
;  480        P 1044  1      refnceflags         : $crffield (fao_string = '!6* ',  ! DEFAULT SPACES WHEN NONE OF
;  481          1045  1                                    field_width = 6),   ! THE FOLLOWING REFERENCES
;  482        P 1046  1      weak_pre            : $crffield (bit_mask = gsy$m_weak,  ! PREFIX FOR WEAK REFERENCE
;  483        P 1047  1                                    fao_string = '!3* WK-',
;  484          1048  1                                    field_width = 6),
;  485          1049  1      reflagsend          : $crffieldend,
;  486        P 1050  1      referencer          : $crffield (fao_string = '!16AC',  ! NAME OF THE REFERENCING MODULE
;  487          1051  1                                    field_width = 16),
;  488          1052  1      referencend         : $crffieldend,
;  489          1053  1  !
;  490          1054  1      relsymval     : $crffield (fao_string = '!4* ', field_width = 4),
;  491          1055  1      reloc_pre     : $crffield (bit_mask = gsy$m_rel, fao_string = '  R-', field_width = 4),
;  492          1056  1      univ_pre      : $crffield (bit_mask = gsy$m_uni, fao_string = '  U-', field_width = 4),
;  493          1057  1      rel_uni_pre   : $crffield (bit_mask = (gsy$m_uni or gsy$m_rel), fao_string = ' RU-', field_width = 4),
;  494          1058  1      ext_pre       : $crffield (bit_mask = sym$m_gref, fao_string = '  X-', field_width = 4),
;  495          1059  1      rel_ext_pre   : $crffield (bit_mask = (gsy$m_rel or sym$m_gref), fao_string = ' RX-', field_width = 4),
;  496          1060  1      relsymvalend  : $crffieldend ;
;  497          1061  1
```

```
;  498          1062  1 !
;  499          1063  1 global
;  500          1064  1     lnk$gq_endtim       : vector [2],                  ! END TIME IS THE TIME WE GET TO HERE
;  501          1065  1     lnk$gb_linespp      : byte,                        ! NUMBER OF LINES PER PAGE
;  502          1066  1     lnk$gl_maxsymsz     : initial (6),                 ! MAX LENGTH SYMBOL SEEN
;  503          1067  1     lnk$gl_maxmodsz     : initial (9),                 ! MAX LENGTH MODULE SEEN
;  504        P 1068  1     lnk$al_sytblfmt     : $crfctltable                 ! DEFINE THE TABLE THAT DRIVES
;  505        P 1069  1                             (keytype   = ascic        ! THE CROSS REFERENCE TO PRODUCE
;  506        P 1070  1                             ,error     = crferror     ! THE FORMATED SYMBOL TABLE
;  507        P 1071  1                             ,output    = lnk$crfout   ! LISTING LINES
;  508        P 1072  1                             ,key1table = symbolfield  ! EACH ENTRY HERE IS A
;  509        P 1073  1                             ,key2table = spacefield   ! POINTER TO THE FORMATS
;  510        P 1074  1                             ,val1table = valuefield
;  511        P 1075  1                             ,val2table = valueflags
;  512        P 1076  1                             ,ref2table = referencer
;  513        P 1077  1                             ,ref1table = refnceflags
;  514          1078  1                             ),
;  515        P 1079  1     lnk$al_valctltb     : $crfctltable                 ! DEFINE THE TABLE THAT DRIVES
;  516        P 1080  1                             (keytype   = bin_u32      ! CREF TO PRODUCE THE CROSS
;  517        P 1081  1                             ,error     = crferror     ! REFERENCE OF SYMBOLS
;  518        P 1082  1                             ,output    = lnk$crfout   ! SORTED BY VALUE
;  519        P 1083  1                             ,key1table = valuefield
;  520        P 1084  1                             ,key2table = spacefield
;  521        P 1085  1                             ,val1table = spacefield
;  522        P 1086  1                             ,val2table = spacefield
;  523        P 1087  1                             ,ref2table = symbolfield
;  524        P 1088  1                             ,ref1table = relsymval
;  525          1089  1                             ) ;
;  526          1090  1
```

```
;  528          1091  1 global routine lnk$mapinit : novalue =          ! ROUTINE TO INITIALIZE MAP FILE OUTPUT
;  529          1092  1 !++
;  530          1093  1 ! FUNCTIONAL DESCRIPTION:
;  531          1094  1 !
;  532          1095  1 ! THIS ROUTINE PERFORMS ALL INITIALIZATION NEEDED TO CREATE THE MAP FILE.
;  533          1096  1 ! IT OPENS THE MAP FILE, SETS UP THE PAGE COUNTER, LINE COUNTER, AND PERFORMS
;  534          1097  1 ! ANY NECESSARY TASKS DEPENDING ON THE MAP QUALIFIERS SPECIFIED BY THE USER.
;  535          1098  1 ! IT SETS UP THE MAP FILE PAGE HEADER AND OUTPUTS THE LINK-WIDE SUMMARY.
;  536          1099  1 ! AT THE PRESENT, IT IS USED TO DRIVE THE OTHER MAP ROUTINES, WHICH EVENTUALLY
;  537          1100  1 ! WILL BE CALLED BY THE LINKER ITSELF.
;  538          1101  1 !
;  539          1102  1 ! FORMAL PARAMETERS:
;  540          1103  1 !
;  541          1104  1 !       NONE
;  542          1105  1 !
;  543          1106  1 ! IMPLICIT INPUTS:
;  544          1107  1 !
;  545          1108  1 !       THE TABLES CONTAINING THE LINKER DATA ARE ALREADY SET UP.
;  546          1109  1 !
;  547          1110  1 ! IMPLICIT OUTPUTS:
;  548          1111  1 !
;  549          1112  1 !       THE MAP FILE IS OPENED FOR OUTPUT.
;  550          1113  1 !       THE PAGE AND LINE NUMBERS ARE INTIALIZED.
;  551          1114  1 !
;  552          1115  1 ! ROUTINE VALUE:
;  553          1116  1 !
;  554          1117  1 !       NOVALUE
;  555          1118  1 !
;  556          1119  1 ! COMPLETION CODES:
;  557          1120  1 !
;  558          1121  1 !       NONE
;  559          1122  1 !
;  560          1123  1 ! SIDE EFFECTS:
;  561          1124  1 !
;  562          1125  1 !       NONE
;  563          1126  1 !
;  564          1127  1 !--
;  565          1128  2 begin
;  566          1129  2 local
;  567          1130  2         eblock          : ref block [, byte],           ! ERROR BLOCK POINTER
;  568          1131  2         saveblock,
;  569          1132  2         sympscadder,                                    ! BLOCKS ESTIMATED FOR SYMS + PSECTS
;  570          1133  2         rmsstv,                                         ! RMS STV CODE
;  571          1134  2         mapfab          : block [fab$c_bln, byte];      ! FILE ACCESS BLOCK - FOR OPEN AND CONNECT
;  572          1135  2
;  573          1136  2 bind
;  574          1137  2         imgauxfnb = lnk$gl_imgfil [fdb$t_auxfnb]        ! REFERENCE THE IMAGE FILE'S AUXILIARY
;  575          1138  2                   : block [nam$c_bln, byte];            ! FILENAME BLOCK
;  576          1139  2
;  577          1140  2 auxfnb   = lnk$gl_mapfil [fdb$t_auxfnb];                ! SET ADDRESS OF AUXILIARY FILENAME BLOCK
;  578          1141  2 mapestim = 7 + .lnk$gw_nmodules*4;                      ! MINIMUM MAP ESTIMATE
;  579          1142  2
;  580          1143  2 if not .lnk$gl_ctlmsk [lnk$v_brief]                    ! IF NOT A BRIEF MAP
;  581          1144  3 then begin                                            ! MUST DO SOME MORE
;  582          1145  3      if .lnk$gl_ctlmsk [lnk$v_cros]                   ! IF A CROSS REFERENCE
;  583          1146  3      then mapestim = .mapestim + .lnk$gw_ncrosrfs/20;  ! ADD IN AN ESTIMATE
;  584          1147  3
```

```
;  585          1148  3      sympscadder   = .lnk$gw_npsects + .lnk$gw_nsymbols/16;      ! COMPUTE SYMBOL + PSECTS COMPONENT
;  586          1149  4      mapestim      = (if .lnk$gl_ctlmsk [lnk$v_long]            ! IF A LONG MAP
;  587          1150  5                       then (.mapestim + 2*.sympscadder)         ! ADD IN DOUBLE THAT
;  588          1151  5                       else (.mapestim + .sympscadder)           ! ONE TIMES FOR DEFAULT FORM
;  589          1152  4                      )
;  590          1153  2      end;
;  591          1154  2
;  592        P 1155  2 $fab_init       (fab = mapfab                                  ! INITIALIZE THE FAB
;  593        P 1156  2                 ,fac = put
;  594        P 1157  2                 ,rfm = var
;  595        P 1158  2                 ,rat = cr
;  596        P 1159  2                 ,fns = .lnk$gl_mapfil [fdb$w_usrnamlen]
;  597        P 1160  2                 ,fna = .lnk$gl_mapfil [fdb$l_usrnamadr]
;  598        P 1161  2                 ,dns = (if .lnk$gb_locnov_map
;  599        P 1162  2                         then %charcount ('.MAP')
;  600        P 1163  2                         else %charcount ('SYS$DISK:[].MAP')
;  601        P 1164  2                        )
;  602        P 1165  2                 ,dna = (if .lnk$gb_locnov_map
;  603        P 1166  2                         then uplit (byte ('.MAP'))
;  604        P 1167  2                         else uplit (byte ('SYS$DISK:[].MAP'))
;  605        P 1168  2                        )
;  606        P 1169  2                 ,nam = .auxfnb
;  607        P 1170  2                 ,alq = .mapestim
;  608          1171  2                 );
;  609          1172  2
;  610          1173  2 if  .lnk$gb_locnov_map                                         ! USE 'OUTPUT FILE PARSING' UNLESS
;  611          1174  2 then mapfab [fab$v_ofp] = false                                ! /MAP WAS A LOCAL QUALIFIER
;  612          1175  2 else mapfab [fab$v_ofp] = true ;                               ! WITHOUT A SPECIFED VALUE
;  613          1176  2
;  614          1177  2 maprab [rab$l_fab] = mapfab;                                  ! THE RAB POINTS TO FAB FOR CONNECT
;  615          1178  2 maprab [rab$b_mbc] = minu (.mapestim, max_k_rmsmbc);           ! SET THE MULTI-BLOCK COUNT
;  616          1179  2 auxfnb [nam$l_rlf] = .lnk$gl_relnam_map;                       ! SET RELATED NAM BLOCK ADDRESS
;  617          1180  2
;  618          1181  3 if not ($getjpi (itmlst=lnk$gt_jpilst);
;  619          1182  3          if  .lnk$gl_filesleft [eq 3
;  620          1183  3          then lnk$closefile ();                                ! THEN CLOSE A FILE
;  621          1184  3          rmserror = $create (fab = mapfab);                    !  AND TRY AGAIN
;  622          1185  3          rmsstv = .mapfab [fab$l_stv];
;  623          1186  3          .rmserror
;  624          1187  3         )
;  625          1188  3 or not (rmserror = $connect (rab = maprab);                    ! CONNECT THE RAB AND
;  626          1189  3          rmsstv = .maprab [rab$l_stv];
;  627          1190  3          .rmserror
;  628          1191  3         )
;  629          1192  3 then begin                                                    ! AND IF THERE IS AN ERROR
;  630          1193  3      signal (lin$_openout, 1, lnk$filnamdsc (mapfab)          ! REPORT THE ERROR
;  631          1194  3              ,.rmserror, .rmsstv
;  632          1195  3             );
;  633          1196  3      return;                                                  ! AND GIVE UP
;  634          1197  2      end;
;  635          1198  2
;  636          1199  2 mapifi = .mapfab [fab$w_ifi];                                ! SAVE INTERNAL IDENT FOR CLOSE
;  637          1200  2 lnk$gl_ctlmsk [lnk$v_mapopn] = true;                         ! SET BIT FOR MAP FILE OPEN
;  638          1201  2 ch$move (dsc$c_s_bln, lnk$filnamdsc (mapfab)                 ! SAVE AWAY REAL FILE NAME
;  639          1202  2          ,lnk$gl_mapfil [fdb$q_filename]
;  640          1203  2          );
;  641          1204  2 !
```

```
;  642          1205  2 ! SET UP THE DESCRIPTOR OF THE IMAGE FILE (IF ANY)
;  643          1206  2 !
;  644          1207  2 if .lnk$gl_imgfil neq 0                                    ! PROVIDED AN IMAGE WAS SPECIFIED
;  645          1208  3 then    begin
;  646          1209  3         imagefilename [0] = .lnk$gl_imgfil [fdb$w_usrnamlen];   ! SET LENGTH OF FILE NAME
;  647          1210  3         imagefilename [1] = .lnk$gl_imgfil [fdb$l_usrnamadr];   ! AND POINTER TO IT
;  648          1211  2         end;
;  649          1212  2
;  650          1213  2 !
;  651          1214  2 ! START MAP OUTPUT
;  652          1215  2 !
;  653          1216  2 lnk$gb_linespp = lib$lp_lines () - 8;                      ! GET NUMBER OF LINES PER PAGE
;  654          1217  2 psectnameline  = 0;                                        ! NO PSECTS YET
;  655          1218  2 subhdline      = 0;                                        ! INITIALIZE FOR NO SUB-HEADER GENERATION
;  656          1219  2 pagenum        = 1;                                        ! NEXT PAGE NUMBER
;  657          1220  2
;  658          1221  2 if not newpage () then return;                            ! OUTPUT FIRST PAGE AND HEADERS
;  659          1222  2 if not mapbox (objmodhdr) then return;                    ! OUTPUT OBJECT MODULE SYNOPSIS HEADER
;  660          1223  2
;  661          1224  2 !
;  662          1225  2 ! IF THERE ARE ANY NON-MODULE ERRORS, DUMP THEM NOW
;  663          1226  2 !
;  664          1227  2 eblock = .lnk$gl_errlist;                                 ! GET LIST POINTER
;  665          1228  2
;  666          1229  2 while .eblock neq 0                                       ! WHILE THERE ARE MORE TO DO
;  667          1230  3 do      begin
;  668          1231  3         lnk$mapout (eblock [oeb$t_text], .eblock [oeb$w_bytcnt]);       ! DUMP THE MESSAGE
;  669          1232  3         saveblock = .eblock [oeb$l_nxtoeb];
;  670          1233  3         eblock    = .saveblock;
;  671          1234  2         end;
;  672          1235  2
;  673          1236  2 mapsubhdr (objmodsubhdr);                                ! OUTPUT OBJECT MODULE SUB-HEADER TITLE
;  674          1237  2 return;
;  675          1238  1 end;


                                                                .TITLE  LNK_MAPROUTINES
                                                                .IDENT  \V04-000\

                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

58 39 28 33 21 43 41 35 31 21 43 41 36 31 21  00000 P.AAA:   .ASCII  \!16AC!15AC!3(9XL) (!11UL.) !5AC!1ZB\<0>
41 35 21 20 29 2E 4C 55 31 31 21 28 20 29 4C  0000F
                        00 42 5A 31 21 43     0001E
                           00000023           00024 CONTRBSTR:
                                                    .LONG   35
                           00000000'          00028          .ADDRESS P.AAA
21 28 20 29 4C 58 39 28 33 21 43 41 31 33 21  0002C P.AAB:   .ASCII  \!31AC!3(9XL) (!11UL.) !5AC!1ZB\<0><0>
42 5A 31 21 43 41 35 21 20 29 2E 4C 55 31 31  0003B
                                    00 00     0004A
                           0000001E           00054 CONTRBST1:
                                                    .LONG   30
                           00000000'          00050          .ADDRESS P.AAB
                 00 00 43 41 39 33 21 43 41 36 31 21  00054 P.AAC:   .ASCII  \!16AC!39AC\<0><0>
                           0000000A           00060 CONTRBST2:
                                                    .LONG   10
                           00000000'          00064          .ADDRESS P.AAC
```

```
21 28 20 29 4C 58 39 28 33 21 43 41 31 33 21  00068 P.AAD:  .ASCII  \!31AC!3(9XL) (!11UL.) !5AC!1ZB\<0><0>
42 5A 31 21 43 41 35 21 20 29 2E 4C 55 31 31  00077
                                              00086
                                    0000001E  00088 CONTRBST3:
                                                       .LONG   30
                                    00000000' 0008C          .ADDRESS P.AAD
58 39 28 33 21 43 41 35 31 21 43 41 36 31 21  00090 P.AAE:  .ASCII  \!16AC!15AC!3(9XL) (!11UL.) !5AC!ZB !10(A\
41 35 21 20 29 2E 4C 55 31 31 21 28 20 29 4C  0009F
                  41 28 30 31 21 20 42 5A 21 43  000AE
                                 00 00 29 43  000B8          .ASCII  \C)\<0><0>
                                    0000002A  000BC PSC_CNTRL_STR:
                                                       .LONG   42
                                    00000000' 000C0          .ADDRESS P.AAE
21 28 20 29 4C 58 39 28 33 21 43 41 31 33 21  000C4 P.AAF:  .ASCII  \!31AC!3(9XL) (!11UL.) !5AC!ZB !10(AC)\<0>
20 42 5A 21 43 41 35 21 20 29 2E 4C 55 31 31  000D3
                     00 29 43 41 28 30 31 21  000E2
                                    00 00 29  000EA          .ASCII  <0><0>
                                    00000025  000EC PSC_CNTRL_ST1:
                                                       .LONG   37
                                    00000000' 000F0          .ADDRESS P.AAF
21 44 25 37 31 21 3C 35 32 21 53 41 34 36 21  000F4 P.AAG:  .ASCII  \!64AS!25<!17%D!>!33<VAX-11 Linker V!AD-!\
6E 69 4C 20 31 31 2D 58 41 56 3C 33 33 21 3E  00103
                  21 2D 44 41 21 56 20 72 65 6B  00112
           4C 55 35 21 65 67 61 50 3E 21 44 41  0011C          .ASCII  \AD!>Page!5UL\
                                    00000034  00128 HDR_CNTRL_STR:
                                                       .LONG   52
                                    00000000' 0012C          .ADDRESS P.AAG
                                 00 00 5E 21  00130 P.AAH:  .ASCII  \!^\<0><0>
                                    00000002  00134 FF_CNTRL_STR:
                                                       .LONG   2
                                    00000000' 00138          .ADDRESS P.AAH
4C 55 30 31 21 43 41 35 31 21 43 41 36 31 21  0013C P.AAI:  .ASCII  \!16AC!15AC!10UL !37AD!19AD\<0><0>
      00 00 44 41 39 31 21 44 41 37 33 21 20  0014B
                                    0000001A  00158 OBJMD_CNTRL_STR:
                                                       .LONG   26
                                    00000000' 0015C          .ADDRESS P.AAI
                        00 00 00 43 41 31 33 21  00160 P.AAJ:  .ASCII  \!31AC\<0><0><0>
                                    00000005  00168 OBJMD_CNTRL_ST1:
                                                       .LONG   5
                                    00000000' 0016C          .ADDRESS P.AAJ
41 37 33 21 20 4C 55 30 31 21 43 41 31 33 21  00170 P.AAK:  .ASCII  \!31AC!10UL !37AD!19AD\<0><0><0>
                  00 00 00 44 41 39 31 21 44  0017F
                                    00000015  00188 OBJMD_CNTRL_ST2:
                                                       .LONG   21
                                    00000000' 0018C          .ADDRESS P.AAK
                                 00 44 41 21  00190 P.AAL:  .ASCII  \!AD\<0>
                                    00000003  00194 CREAT_CNTRL_STR:
                                                       .LONG   3
                                    00000000' 00198          .ADDRESS P.AAL
           00 20 20 4C 55 38 21 43 41 33 33 21  0019C P.AAM:  .ASCII  \!33AC!8UL  \<0>
                                    0000000B  001A8 OMDADRSTR:
                                                       .LONG   11
                                    00000000' 001AC          .ADDRESS P.AAM
           00 2B 2D 2A 38 31 21 2B 5F 21 5F 21  001B0 P.AAN:  .ASCII  \!_!_+!18*-+\<0>
                                    0000000B  001BC ABBRVTBL1_STR:
                                                       .LONG   11
                                    00000000' 001C0          .ADDRESS P.AAN
```

```
                                00 21 21 43 41 21 21 21 00 21 5F 21  001C4 P.AAO:  .ASCII  \!_!_!!!AC!!\<0>
                                                   0000000B  001D0 ABBRVTBL2_STR:
                                                             .LONG   11
                                                   00000000' 001D4 .ADDRESS P.AAO
20 20 57 55 36 21 42 55 34 21 43 41 36 31 21  001D8 P.AAP:  .ASCII  \!16AC!4UB!6UW  !2AC!8XL!2AC!9UL!4UB !AC \
55 39 21 43 41 32 21 4C 58 38 21 43 41 32 21  001E7
                  20 43 41 21 20 42 55 34 21 4C  001F6
                     00 43 41 21 20 43 41 21  00200          .ASCII  \!AC !AC\<0>
                                                   0000002F  00208 ISECT_CNTRL_STR:
                                                             .LONG   47
                                                   00000000' 0020C .ADDRESS P.AAP
20 20 57 55 36 21 42 55 34 21 43 41 36 31 21  00210 P.AAQ:  .ASCII  \!16AC!4UB!6UW  !2AC!8XL!2AC!9UL!4UB!28< \
55 39 21 43 41 32 21 4C 58 38 21 43 41 32 21  0021F
                  20 3C 38 32 21 42 55 34 21 4C  0022E
31 21 3E 21 43 41 21 20 43 41 21 20 43 41 21  00238          .ASCII  \!AC !AC !AC!>!16AC !12AC !6UB  !8UL\<0>
20 42 55 36 21 20 43 41 32 31 21 20 43 41 36  00247
                        00 4C 55 38 21 20  00256
                                                   0000004B  0025C GBLIS_CNTRL_STR:
                                                             .LONG   75
                                                   00000000' 00260 .ADDRESS P.AAQ
6D 65 6D 20 6C 61 75 74 72 69 56 3C 39 34 21  00264 P.AAR:  .ASCII  \!49<Virtual memory allocated:!>!3(9XL) (\
21 3A 64 65 74 61 63 6F 6C 6C 61 20 79 72 6F  00273
                  28 20 29 4C 58 39 28 33 21 3E  00282
21 20 2C 53 25 21 65 74 79 62 20 2E 4C 55 21  0028C          .ASCII  \!UL. byte!%S, !UL. page!%S)\<0>
      00 29 53 25 21 65 67 61 70 20 2E 4C 55  0029B
                                                   00000043  002A8 VIRMEMLINE:
                                                             .LONG   67
                                                   00000000' 002AC .ADDRESS P.AAR
3A 65 7A 69 73 20 6B 63 61 74 53 3C 30 35 21  002B0 P.AAS:  .ASCII  \!50<Stack size:!>!8UW. page!%S\<0><0>
53 25 21 65 67 61 70 20 2E 57 55 38 21 3E 21  002BF
                                    00 00  002CE
                                                   0000001E  002D0 STACKLINE:
                                                             .LONG   30
                                                   00000000' 002D4 .ADDRESS P.AAS
3A 74 61 6D 72 6F 66 20 70 61 4D 3C 30 35 21  002D8 P.AAT:  .ASCII  \!50<Map format:!>!AC!AC!n file !AD\<0>
65 6C 69 66 20 6E 69 43 41 21 43 41 21 3E 21  002E7
                              00 44 41 21 20  002F6
                                          00  002FB          .ASCII  <0>
                                                   00000022  002FC MAPFORMAT:
                                                             .LONG   34
                                                   00000000' 00300 .ADDRESS P.AAT
6D 20 64 65 74 61 6D 69 74 73 45 3C 30 35 21  00304 P.AAU:  .ASCII  \!50<Estimated map length:!>!UL. blocks-
4C 55 21 3E 21 3A 68 74 67 6E 65 6C 20 70 61  00313          \<0>
                        00 73 6B 63 6F 6C 62 20 2E  00322
                                          00  0032B          .ASCII  <0>
                                                   00000026  0032C MAPLENGTH:
                                                             .LONG   38
                                                   00000000' 00330 .ADDRESS P.AAU
65 64 61 65 68 20 65 67 61 6D 49 3C 30 35 21  00334 P.AAV:  .ASCII  \!50<Image header virtual block limits:!>\
6B 63 6F 6C 62 20 6C 61 75 74 72 69 76 20 72  00343
                  3E 21 3A 73 74 69 6D 69 6C 20  00352
55 35 21 28 20 2E 57 55 39 21 2E 4C 55 38 21  0035C          .ASCII  \!8UL.!9UW. (!5UW. block!%S)\<0>
      00 29 53 25 21 6B 63 6F 6C 62 20 2E 57  0036B
                                                   00000043  00378 IMGHDRBLKLINE:
                                                             .LONG   67
                                                   00000000' 0037C .ADDRESS P.AAV
72 61 6E 69 62 20 65 67 61 6D 49 3C 30 35 21  00380 P.AAW:  .ASCII  \!50<Image binary virtual block limits:!>\
```

```
6B 63 6F 6C 62 20 6C 61 75 74 72 69 76 20 79  0038F
                3E 21 3A 73 74 69 6D 69 6C 20  0039E
55 35 21 28 20 2E 4C 55 39 21 2E 4C 55 38 21  003A8          .ASCII  \!8UL.!9UL. (.5UW. block!%S)\<0>
      00 29 53 25 21 6B 63 6F 6C 62 20 2E 57  003B7
                                 00000043  003C4 IMGBINBLKLINE:
                                                         .LONG   67
                                 00000000' 003C8         .ADDRESS P.AAW
20 65 6D 61 6E 20 65 67 61 6D 49 3C 30 35 21  003CC P.AAX:   .ASCII  \!50<Image name and identification:!>!AC \
74 61 63 69 66 69 74 6E 65 64 69 20 64 6E 61  003DB
                20 43 41 21 3E 21 3A 6E 6F 69  003EA
                                    00 43 41 21  003F4          .ASCII  \!AC\<0>
                                 0000002B  003F8 IDENTLINE:
                                                         .LONG   43
                                 00000000' 003FC         .ADDRESS P.AAX
66 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21  00400 P.AAY:   .ASCII  \!50<Number of files:!>!8UW.\<0>
      00 2E 57 55 38 21 3E 21 3A 73 65 6C 69  0040F
                                 0000001B  0041C NFILLINE:
                                                         .LONG   27
                                 00000000' 00420         .ADDRESS P.AAY
6D 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21  00424 P.AAZ:   .ASCII  \!50<Number of modules:!>!8UW.\<0><0>
00 2E 57 55 38 21 3E 21 3A 73 65 6C 75 64 6F  00433
                                       00 00442
                                       00 00443          .ASCII  <0>
                                 0000001D  00444 NMODLINE:
                                                         .LONG   29
                                 00000000' 00448         .ADDRESS P.AAZ
70 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21  0044C P.ABA:   .ASCII  \!50<Number of program sections:!>!8UW.-
73 6E 6F 69 74 63 65 73 20 6D 61 72 67 6F 72  0045B                  \<0>
            00 2E 57 55 38 21 3E 21 3A        0046A
                                       00 00473          .ASCII  <0>
                                 00000026  00474 NPSCLINE:
                                                         .LONG   38
                                 00000000' 00478         .ADDRESS P.ABA
67 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21  0047C P.ABB:   .ASCII  \!50<Number of global symbols:!>!8UW.\
21 3A 73 6C 6F 62 6D 79 73 20 6C 61 62 6F 6C  0048B
                              2E 57 55 38 21 3E  0049A
                                 00000024  004A0 NSYMLINE:
                                                         .LONG   36
                                 00000000' 004A4         .ADDRESS P.ABB
75 20 67 6E 69 64 75 6C 63 6E 49 3C 30 35 21  004A8 P.ABC:   .ASCII  \!50<Including undefined count of:!>!8UW.\
20 74 6E 75 6F 63 20 64 65 6E 69 66 65 64 6E  004B7
                  2E 57 55 38 21 3E 21 3A 66 6F  004C6
                                 00000028  004D0 NUNDFLINE:
                                                         .LONG   40
                                 00000000' 004D4         .ADDRESS P.ABC
63 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21  004D8 P.ABD:   .ASCII  \!50<Number of cross references:!>!8UW.-
73 65 63 6E 65 72 65 66 65 72 20 73 73 6F 72  004E7                  \<0>
            00 2E 57 55 38 21 3E 21 3A        004F6
                                       00 004FF          .ASCII  <0>
                                 00000026  00500 NCROSREFS:
                                                         .LONG   38
                                 00000000' 00504         .ADDRESS P.ABD
69 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21  00508 P.ABE:   .ASCII  \!50<Number of image sections:!>!8UW.\
21 3A 73 6E 6F 69 74 63 65 73 20 65 67 61 6D  00517
                              2E 57 55 38 21 3E  00526
                                 00000024  0052C NISCLINE:
                                                         .LONG   36
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```
                                                00000000'  00530          .ADDRESS P.ABE
61 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21    00534 P.ABF:   .ASCII  \!50<Number of address fixups:!>!8UL.\
21 3A 73 70 75 78 69 66 20 73 73 65 72 64 64    00543
                        2E 4C 55 38 21 3E       00552
                                                00000024   00558 NADREFLINE:
                                                               .LONG   36
                                                00000000'  0055C          .ADDRESS P.ABF
63 20 66 6F 20 72 65 62 6D 75 4E 3C 30 35 21    00560 P.ABG:   .ASCII  \!50<Number of code references to shareab\
20 73 65 63 6E 65 72 65 66 65 72 20 65 64 6F    0056F
                  62 61 65 72 61 68 73 20 6F 74 0057E
55 38 21 3E 21 3A 73 65 67 61 6D 69 20 65 6C    00588          .ASCII  \le images:!>!8UL.\<0><0><0>
                              00 00 00 2E 4C    00597
                                                00000039   0059C NSHRSYMLINE:
                                                               .LONG   57
                                                00000000'  005A0          .ADDRESS P.ABG
72 74 20 72 65 67 67 75 62 65 44 3C 30 35 21    005A4 P.ABH:   .ASCII  \!50<Debugger transfer address:!>!8XL\
3A 73 73 65 72 64 64 61 20 72 65 66 73 6E 61    005B3
                              4C 58 38 21 3E 21 005C2
                                                00000024   005C8 DBGTFRLINE:
                                                               .LONG   36
                                                00000000'  005CC          .ADDRESS P.ABH
65 66 73 6E 61 72 74 20 53 54 4F 3C 30 35 21    005D0 P.ABI:   .ASCII  \!50<OTS transfer address - !AC:!>!8XL\<0>
43 41 21 20 2D 20 73 73 65 72 64 64 61 20 72    005DF
                        00 4C 58 38 21 3E 21 3A 005EE
                                    00 00       005F6          .ASCII  <0><0>
                                                00000025   005F8 OTSTFRLINE:
                                                               .LONG   37
                                                00000000'  005FC          .ADDRESS P.ABI
66 73 6E 61 72 74 20 72 65 73 55 3C 30 35 21    00600 P.ABJ:   .ASCII  \!50<User transfer address:!>!8XL\
38 21 3E 21 3A 73 73 65 72 64 64 61 20 72 65    0060F
                                    4C 58       0061E
                                                00000020   00620 USRTFRLINE:
                                                               .LONG   32
                                                00000000'  00624          .ADDRESS P.ABJ
3A 65 70 79 74 20 65 67 61 6D 49 3C 30 35 21    00628 P.ABK:   .ASCII  \!50<Image type:!>!AC.\<0><0><0>
                  00 00 00 2E 43 41 21 3E 21    00637
                                                00000015   00640 IMGATRLINE:
                                                               .LONG   21
                                                00000000'  00644          .ADDRESS P.ABK
3A 65 70 79 74 20 65 67 61 6D 49 3C 30 35 21    00648 P.ABL:   .ASCII  \!50<Image type:!>!AC!AC. Global Section \
61 62 6F 6C 47 20 2E 43 41 21 43 41 21 3E 21    00657
                  20 6E 6F 69 74 63 65 53 20 6C 00666
6E 65 64 49 20 2C 43 41 21 3D 68 63 74 61 4D    00670          .ASCII  \Match=!AC, Ident, Major=!UB, Minor=!UL-
4D 20 2C 42 55 21 3D 72 6F 6A 61 4D 20 2C 74    0067F                  \<0>
                  00 4C 55 21 3D 72 6F 6E 69    0068E
                                    00          00697          .ASCII  <0>
                                                0000004E   00698 IMGSHRLINE:
                                                               .LONG   78
                                                00000000'  0069C          .ADDRESS P.ABL
                                          05    006A0 P.ABM:   .BYTE   5
                                20 45 54 59 42  006A1          .ASCII  \BYTE \
                                          05    006A6 P.ABN:   .BYTE   5
                                20 44 52 4F 57  006A7          .ASCII  \WORD \
                                          05    006AC P.ABO:   .BYTE   5
                                20 47 4E 4F 4C  006AD          .ASCII  \LONG \
                                          05    006B2 P.ABP:   .BYTE   5
                                20 44 41 55 51  006B3          .ASCII  \QUAD \
```

```
                                        05  006B8 P.ABQ:   .BYTE   5
                                20  2A  2A  20  32  006B9         .ASCII  \2 ** \
                                        05  006BE P.ABR:   .BYTE   5
                                20  45  47  41  50  006BF         .ASCII  \PAGE \
                                        01  006C4 P.ABS:   .BYTE   1
                                        20  006C5         .ASCII  \ \
                                        01  006C6 P.ABT:   .BYTE   1
                                        2D  006C7         .ASCII  \-\
                                        02  006C8 P.ABU:   .BYTE   2
                                    52  2D  006C9         .ASCII  \-R\
                                        02  006CB P.ABV:   .BYTE   2
                                    2D  50  006CC         .ASCII  \P-\
                                        06  006CE P.ABW:   .BYTE   6
                            2C  43  49  50  20  20  006CF         .ASCII  \  PIC,\
                                        04  006D5 P.ABX:   .BYTE   4
                                20  42  49  4C  006D6         .ASCII  \LIB,\
                                        04  006DA P.ABY:   .BYTE   4
                                20  52  56  4F  006DB         .ASCII  \OVR,\
                                        04  006DF P.ABZ:   .BYTE   4
                                20  4C  45  52  006E0         .ASCII  \REL,\
                                        04  006E4 P.ACA:   .BYTE   4
                                20  4C  42  47  006E5         .ASCII  \GBL,\
                                        05  006E9 P.ACB:   .BYTE   5
                            43  45  56  20  20  006EA         .ASCII  \  VEC\
                                        06  006EF P.ACC:   .BYTE   6
                            2C  52  48  53  20  20  006F0         .ASCII  \  SHR,\
                                        06  006F6 P.ACD:   .BYTE   6
                            2C  45  58  45  20  20  006F7         .ASCII  \  EXE,\
                                        05  006FD P.ACE:   .BYTE   5
                                2C  44  52  20  20  006FE         .ASCII  \  RD,\
                                        06  00703 P.ACF:   .BYTE   6
                            2C  54  52  57  20  20  00704         .ASCII  \  WRT,\
                                        06  0070A P.ACG:   .BYTE   6
                            2C  43  49  50  4F  4E  0070B         .ASCII  \NOPIC,\
                                        04  00711 P.ACH:   .BYTE   4
                                    2C  52  53  55  00712         .ASCII  \USR,\
                                        04  00716 P.ACI:   .BYTE   4
                                    2C  4E  4F  43  00717         .ASCII  \CON,\
                                        04  0071B P.ACJ:   .BYTE   4
                                    2C  53  42  41  0071C         .ASCII  \ABS,\
                                        04  00720 P.ACK:   .BYTE   4
                                    2C  4C  43  4C  00721         .ASCII  \LCL,\
                                        05  00725 P.ACL:   .BYTE   5
                                43  45  56  4F  4E  00726         .ASCII  \NOVEC\
                                        06  0072B P.ACM:   .BYTE   6
                            2C  52  48  53  4F  4E  0072C         .ASCII  \NOSHR,\
                                        06  00732 P.ACN:   .BYTE   6
                            2C  45  58  45  4F  4E  00733         .ASCII  \NOEXE,\
                                        05  00739 P.ACO:   .BYTE   5
                                2C  44  52  4F  4E  0073A         .ASCII  \NORD,\
                                        06  0073F P.ACP:   .BYTE   6
                            2C  54  52  57  4F  4E  00740         .ASCII  \NOWRT,\
                                        0A  00746 P.ACQ:   .BYTE   10
45  4C  42  41  54  55  43  45  58  45  00747         .ASCII  \EXECUTABLE\
                                        06  00751 P.ACR:   .BYTE   6
                            4D  45  54  53  59  53  00752         .ASCII  \SYSTEM\
                                        0A  00758 P.ACS:   .BYTE   10
```

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```

```
                                                00000048  00ACC OBJMODSUBHDR:
                                                                .LONG   75
                                                00000000'  00AD0        .ADDRESS P.AEB
                                                00000038  00AD4        .LONG   56
                                                00000000'  00AD8        .ADDRESS P.AEC
65 6D 61 4E 20 65 6C 75 64 6F 4D 3C 33 33 21  00ADC P.AED:  .ASCII  \!33<Module Name!>!8<  Number!>  !33<Modu\
3E 21 72 65 62 6D 75 4E 20 20 3C 38 21 3E 21  00AEB
                  75 64 6F 4D 3C 33 33 21 20  00AFA
4E 20 20 3C 38 21 3E 21 65 6D 61 4E 20 65 6C  00B04        .ASCII  \le Name!>!8<  Number!>  !33<Module Name!\
6F 4D 3C 33 33 21 20 20 3E 21 72 65 62 6D 75  00B13
                  21 65 6D 61 4E 20 65 6C 75  00B22
00 3E 21 72 65 62 6D 75 4E 20 20 3C 38 21 3E  00B2C        .ASCII  \>!8<  Number!>\<0><0>
                                    00        00B3B
20 3C 38 21 3E 21 2D 2A 31 31 21 3C 33 33 21  00B3C P.AEE:  .ASCII  \!33<!11*-!>!8<  !6*-!>  !33<!11*-!>!8<  \
31 21 3C 33 33 21 20 20 3E 21 2D 2A 36 21 20  00B4B
                  20 20 3C 38 21 3E 21 2D 2A  31  00B5A
31 31 21 3C 33 33 21 20 20 3E 21 2D 2A 36 21  00B64        .ASCII  \!6*-!>  !33<!11*-!>!8<  !6*-!>\<0><0>
3E 21 2D 2A 36 21 20 20 3C 38 21 3E 21 2D 2A  00B73
                                    00 00 00  00B82
                                                0000005E  00B84 OMDADRSUBHDR:
                                                                .LONG   94
                                                00000000'  00B88        .ADDRESS P.AED
                                                00000046  00B8C        .LONG   70
                                                00000000'  00B90        .ADDRESS P.AEE
61 56 3C 36 31 21 3E 21 6C 6F 62 6D 79 53 3C  00B94 P.AEF:  .ASCII  \<Symbol!>!16<Value!>!\<0><0><0>
                  00 00 00 21 3E 21 65 75 6C  00BA3
                                                00000015  00BAC CRFSUBHD1:
                                                                .LONG   21
                                                00000000'  00BB0        .ADDRESS P.AEF
65 52 3E 21 79 42 20 64 65 6E 69 66 65 44 3C  00BB4 P.AEG:  .ASCII  \<Defined By!>Referenced By ...\<0><0>
2E 2E 2E 20 79 42 20 64 65 63 6E 65 72 65 66  00BC3
                                    00 00     00BD2
                                                0000001E  00BD4 CRFSUBHD2:
                                                                .LONG   30
                                                00000000'  00BD8        .ADDRESS P.AEG
2D 2A 35 21 3C 36 31 21 3E 21 2D 2A 36 21 3C  00BDC P.AEH:  .ASCII  \<!6*-!>!16<!5*-!>!\<0><0>
                                    00 00 21 3E 21  00BEB
                                                00000012  00BF0 CRFSUBHD3:
                                                                .LONG   18
                                                00000000'  00BF4        .ADDRESS P.AEH
00 00 2D 2A 37 31 21 3E 21 2D 2A 30 31 21 3C  00BF8 P.AEI:  .ASCII  \<!10*-!>!17*-\<0><0><0>
                                    00        00C07
                                                0000000D  00C08 CRFSUBHD4:
                                                                .LONG   13
                                                00000000'  00C0C        .ADDRESS P.AEI
00 53 41 21 4C 55 21 53 41 21 4C 55 21 21 21  00C10 P.AEJ:  .ASCII  \!!!UL!AS!UL!AS\<0><0>
                                    00        00C1F
                                                0000000E  00C20 FAO_CREFSUBHD:
                                                                .LONG   14
                                                00000000'  00C24        .ADDRESS P.AEJ
                        00 43 41 4C 55 21 21 21  00C28 P.AEK:  .ASCII  \!!!ULAC\<0>
                                                00000007  00C30 FAO_CRE1:
                                                                .LONG   7
                                                00000000'  00C34        .ADDRESS P.AEK
39 31 21 3E 21 6C 6F 62 6D 79 53 3C 36 31 21  00C38 P.AEL:  .ASCII  \!16<Symbol!>!19<Value!>!16<Symbol!>!19<V\
6D 79 53 3C 36 31 21 3E 21 65 75 6C 61 56 3C  00C47
                  56 3C 39 31 21 3E 21 6C 6F  62  00C56
```

```
6F 62 6D 79 53 3C 36 31 21 3E 21 65 75 6C 61  00C60          .ASCII  \alue!>!16<Symbol!>!19<Value!>!16<Symbol!\
21 3E 21 65 75 6C 61 56 3C 39 31 21 3E 21 6C  00C6F
                  21 6C 6F 62 6D 79 53 3C 36 31  00C7E
                     00 00 65 75 6C 61 56 3E     00C88          .ASCII  \>Value\<0><0>
21 3C 39 31 21 3E 21 2D 2A 36 21 3C 36 31 21  00C90 P.AEM:   .ASCII  \!16<!6*-!>!19<!5*-!>!16<!6*-!>!19<!5*-!>\
3E 21 2D 2A 36 21 3C 36 31 21 3E 21 2D 2A 35  00C9F
                  3E 21 2D 2A 35 21 3C 39 31 21  00CAE
21 3C 39 31 21 3E 21 2D 2A 36 21 3C 36 31 21  00CB8          .ASCII  \!16<!6*-!>!19<!5*-!>!16<!6*-!>!5*-\<0>
3E 21 2D 2A 36 21 3C 36 31 21 3E 21 2D 2A 35  00CC7
                        00 2D 2A 35 21        00CD6
                                    00        00CDB          .ASCII  <0>
                           00000056           00CDC SYMSUBHDR:
                                              .LONG   86
                           00000000'          00CE0          .ADDRESS P.AEL
                           0000004A           00CE4          .LONG   74
                           00000000'          00CE8          .ADDRESS P.AEM
32 31 21 3E 21 6C 6F 62 6D 79 53 3C 32 33 21  00CEC P.AEN:   .ASCII  \!32<Symbol!>!12<Value!>!32<Symbol!>!12<V\
6D 79 53 3C 32 33 21 3E 21 65 75 6C 61 56 3C  00CFB
                  56 3C 32 31 21 3E 21 6C 6F 62  00D0A
6F 62 6D 79 53 3C 32 33 21 3E 21 65 75 6C 61  00D14          .ASCII  \alue!>!32<Symbol!>!12<Value!>\<0><0>
00 3E 21 65 75 6C 61 56 3C 32 31 21 3E 21 6C  00D23
                                    00        00D32
                                    00        00D33          .ASCII  <0>
21 3C 32 31 21 3E 21 2D 2A 36 21 3C 32 33 21  00D34 P.AEO:   .ASCII  \!32<!6*-!>!12<!5*-!>!32<!6*-'>!12<!5*-!>\
3E 21 2D 2A 36 21 3C 32 33 21 3E 21 2D 2A 35  00D43
                  3E 21 2D 2A 35 21 3C 32 31 21  00D52
21 3C 32 31 21 3E 21 2D 2A 36 21 3C 32 33 21  00D5C          .ASCII  \!32<!6*-!>!12<!5*-!>\
                        3E 21 2D 2A 35        00D6B
                           00000045           00D70 SYMLNGSUBHDR:
                                              .LONG   69
                           00000000'          00D74          .ADDRESS P.AEN
                           0000003C           00D78          .LONG   60
                           00000000'          00D7C          .ADDRESS P.AEO
62 6D 79 53 3E 21 65 75 6C 61 56 3C 30 34 21  00D80 P.AEP:   .ASCII  \!40<Value!>Symbols...\<0><0><0>
                     00 00 00 2E 2E 2E 73 6C 6F  00D8F
2D 2A 30 31 21 3E 21 2D 2A 35 21 3C 30 34 21  00D98 P.AEQ:   .ASCII  \!40<!5*-!>!10*-\<0>
                                    C0        00DA7
                           00000015           00DA8 VALSUBHDR:
                                              .LONG   21
                           00000000'          00DAC          .ADDRESS P.AEP
                           0000000F           00DB0          .LONG   15
                           00000000'          00DB4          .ADDRESS P.AEQ
21 72 65 74 73 75 6C 43 20 20 20 3C 36 31 21  00DB8 P.AER:   .ASCII  \!16<   Cluster!>!5<Type!>!8<Pages!>!51<!\
61 50 3C 38 21 3E 21 65 70 79 54 3C 35 21 3E  00DC7
                  21 3C 31 35 21 3E 21 73 65 67  00DD6
20 6C 61 62 6F 6C 47 3C 36 31 21 3E 21 43 41  00DE0          .ASCII  \AC!>!16<Global Sec. Name!>!12<   Match!>\
3C 32 31 21 3E 21 65 6D 61 4E 20 2E 63 65 53  00DEF
                  3E 21 68 63 74 61 4D 20 20 20  00DFE
6F 6E 69 4D 20 20 20 64 69 72 6F 6A 61 4D 20  00E08          .ASCII  \ Majorid   Minorid\<0><0>
                           00 00 64 69 72        00E17
35 21 3E 21 2D 2A 37 21 20 20 20 3C 36 31 21  00E1C P.AES:   .ASCII  \!16<   !7*-!>!5<!4*-!>!8<!5*-!>!9*-  !8*\
21 2D 2A 35 21 3C 38 21 3E 21 2D 2A 34 21 3C  00E2B
                  2A 38 21 20 20 2D 2A 39 21 3E  00E3A
2A 31 32 21 3C 37 32 21 20 2D 2A 33 21 20 2D  00E44          .ASCII  \- !3*- !27<!21*-!>!16*-!12<   !5*-!> !7*\
20 20 20 3C 32 31 21 2D 2A 36 31 21 3E 21 2D  00E53
                  2A 37 21 20 3E 21 2D 2A 35 21  00E62
                        2D 2A 37 21 20 20 20 2D  00E6C          .ASCII  \-   !7*-\
```

```
                                                00000062  00E74 ISDSUBHDR:
                                                                .LONG   98
                                                00000000' 00E78         .ADDRESS P.AER
                                                00000058  00E7C         .LONG   88
                                                00000000' 00E80         .ADDRESS P.AES
                                                      2D  00E84 P.AET:  .BYTE   45
6B 73 69 44 20 20 72 64 64 41 20 65 73 61 42    00E85             .ASCII  \Base Addr  Disk VBN PFC Protection and P\
63 65 74 6F 72 50 20 43 46 50 20 4E 42 56 20    00E94
                  50 20 64 6E 61 20 6E 6F 69 74 00EA3
                                 67 6E 69 67 61 00EAD             .ASCII  \aging\
                                                00EB2             .BLKB   2
63 20 65 6C 69 66 20 65 67 61 6D 69 20 6F 4E    00EB4 P.AEU:  .ASCII  \No image file created\<0><0><0>
                  00 00 00 64 65 74 61 65 72    00EC3
                     00 00 00 43 41 35 31 21    00ECC P.AEV:  .ASCII  \!15AC\<0><0><0>
                                 00 00 00 20    00ED4 P.AEW:  .ASCII  \  \<0><0><0>
                                 00 4C 58 21    00ED8 P.AEX:  .ASCII  \!XL\<0>
                                 20 2A 33 21    00EDC P.AEY:  .ASCII  \!3* \
                                 00 20 52 2D    00EE0 P.AEZ:  .ASCII  \-R \<0>
                                 00 20 55 2D    00EE4 P.AFA:  .ASCII  \-U \<0>
                                 00 55 52 2D    00EE8 P.AFB:  .ASCII  \-RU\<0>
                                 00 20 58 2D    00EEC P.AFC:  .ASCII  \-X \<0>
                                 00 58 52 2D    00EF0 P.AFD:  .ASCII  \-RX\<0>
                                 00 20 2A 2D    00EF4 P.AFE:  .ASCII  \-* \<0>
                                 20 2A 36 21    00EF8 P.AFF:  .ASCII  \!6* \
                     00 2D 4B 57 20 2A 33 21    00EFC P.AFG:  .ASCII  \!3* WK-\<0>
                     00 00 00 43 41 36 31 21    00F04 P.AFH:  .ASCII  \!16AC\<0><0><0>
                                 20 2A 34 21    00F0C P.AFI:  .ASCII  \!4* \
                                 2D 52 20 20    00F10 P.AFJ:  .ASCII  \  R-\
                                 2D 55 20 20    00F14 P.AFK:  .ASCII  \  U-\
                                 2D 55 52 20    00F18 P.AFL:  .ASCII  \ RU-\
                                 2D 58 20 20    00F1C P.AFM:  .ASCII  \  X-\
                                 2D 58 52 20    00F20 P.AFN:  .ASCII  \ RX-\
                                 50 41 4D 2E    00F24 P.AFO:  .ASCII  \.MAP\
50 41 4D 2E 5D 5B 3A 4B 53 49 44 24 53 59 53    00F28 P.AFP:  .ASCII  \SYS$DISK:[].MAP\

                                                                .PSECT  $OWN$,NOEXE,2

                                                00000 ALIGNMENT:
                                                                .BLKB   4
                                                00004 OUTLINE:  .BLKB   132
                                                00000084  00088 OUTDES: .LONG   132
                                                00000000' 0008C         .ADDRESS OUTLINE
                                                00090 OUTSIZE:  .BLKB   2
                                                00092           .BLKB   2
                                                00094 ARGS:     .BLKB   40
                                                000BC LINECNT:  .BLKB   4
                                                000C0 PAGENUM:  .BLKB   4
                                                000C4 SUBHDLINE:
                                                                .BLKB   4
                                                000C8 CRFSUBHDR:
                                                                .BLKB   16
                                                000D8 FAO_SYM:  .BLKB   8
                                                00000008  000E0 FAO_SYMDESC:
                                                                .LONG   8
                                                00000000' 000E4         .ADDRESS FAO_SYM
                                                000E8 FAO_MOD:  .BLKB   8
                                                00000008  000F0 FAO_MODESC:
```

```
                                .LONG   8
00000000'  000F4                .ADDRESS FAO_MOD
           000F8 LASTOMD:       .BLKB   4
           000FC MAPESTIM:
                                .BLKB   4
00000015   00100 IMAGEFILENAME:
                                .LONG   21
00000000'  00104                .ADDRESS P.AEU
           00108 PSECTNAMELINE:
                                .BLKB   4
           0010C AUXFNB:        .BLKB   4
           00110 RMSERROR:
                                .BLKB   4
      01   00114 MAPRAB:        .BYTE   1
      44   00115                .BYTE   68
    0000   00116                .WORD   0
00000400   00118                .LONG   1024
00000000   0011C                .LONG   0
00000000   00120                .LONG   0
    0000#  00124                .WORD   0[3]
    0000   0012A                .WORD   0
00000000   0012C                .LONG   0
    0000   00130                .WORD   0
      00   00132                .BYTE   0
      00   00133                .BYTE   0
    0000   00134                .WORD   0
    0000   00136                .WORD   0
00000C00   00138                .LONG   0
00000000   0013C                .LONG   0
00000000   00140                .LONG   0
00000000   00144                .LONG   0
      00   00148                .BYTE   0
      00   00149                .BYTE   0
      00   0014A                .BYTE   0
      00   0014B                .BYTE   0
00000000   0014C                .LONG   0
00000000   00150                .LONG   0
00000000   00154                .LONG   0
           00158 MAPIFI:        .BLKB   2
           0015A                .BLKB   2
    8000   0015C SYMBOLFIELD:
                                .WORD   -32768
      01   0015E                .BYTE   1
      0F   0015F                .BYTE   15
00000005   00160                .LONG   5
00000000'  00164                .ADDRESS P.AEV
    0000   00168 SYMBOLEND:
                                .WORD   0
           0016A                .BLKB   2
    8000   0016C SPACEFIELD:
                                .WORD   -32768
      01   0016E                .BYTE   1
      01   0016F                .BYTE   1
00000001   00170                .LONG   1
00000000'  00174                .ADDRESS P.AEW
    0000   00178 SPACEEND:
                                .WORD   0
```

```
                0017A                   .BLKB   2
    8000        0017C VALUEFIELD:
                                        .WORD   -32768
      01        0017E                   .BYTE   1
      08        0017F                   .BYTE   8
00000003        00180                   .LONG   3
00000000'       00184                   .ADDRESS P.AEX
    0000        00188 VALUEEND:
                                        .WORD   0
                0018A                   .BLKB   2
    8000        0018C VALUEFLAGS:
                                        .WORD   -32768
      01        0018E                   .BYTE   1
      03        0018F                   .BYTE   3
00000004        00190                   .LONG   4
00000000'       00194                   .ADDRESS P.AEY
    8008        00198 RELOC_SUF:
                                        .WORD   -32760
      01        0019A                   .BYTE   1
      03        0019B                   .BYTE   3
00000003        0019C                   .LONG   3
00000000'       001A0                   .ADDRESS P.AEZ
    8004        001A4 UNIV_SUF:
                                        .WORD   -32764
      01        001A6                   .BYTE   1
      03        001A7                   .BYTE   3
00000003        001A8                   .LONG   3
00000000'       001AC                   .ADDRESS P.AFA
    800C        001B0 REL_UNI_SUF:
                                        .WORD   -32756
      01        001B2                   .BYTE   1
      03        001B3                   .BYTE   3
00000003        001B4                   .LONG   3
00000000'       001B8                   .ADDRESS P.AFB
    C000        001BC EXT_SUF:          .WORD   -16384
      01        001BE                   .BYTE   1
      03        001BF                   .BYTE   3
00000003        001C0                   .LONG   3
00000000'       001C4                   .ADDRESS P.AFC
    C008        001C8 REL_EXT_SUF:
                                        .WORD   -16376
      01        001CA                   .BYTE   1
      03        001CB                   .BYTE   3
00000003        001CC                   .LONG   3
00000000'       001D0                   .ADDRESS P.AFD
    8002        001D4 UNDEF_SUF:
                                        .WORD   -32766
      00        001D6                   .BYTE   0
      03        001D7                   .BYTE   3
00000003        001D8                   .LONG   3
00000000'       001DC                   .ADDRESS P.AFE
    0000        001E0 VALFLGSEND:
                                        .WORD   0
                001E2                   .BLKB   2
    8000        001E4 REFNCEFLAGS:
                                        .WORD   -32768
      01        001E6                   .BYTE   1
```

```
                06  001E7          .BYTE   6
00000004        04  001E8          .LONG   4
00000000'       00  001EC          .ADDRESS P.AFF
              8001  001F0 WEAK_PRE:
                                   .WORD   -32767
                01  001F2          .BYTE   1
                06  001F3          .BYTE   6
00000007        07  001F4          .LONG   7
00000000'       00  001F8          .ADDRESS P.AFG
              0000  001FC REFLAGSEND:
                                   .WORD   0
                    001FE          .BLKB   2
              8000  00200 REFERENCER:
                                   .WORD   -32768
                01  00202          .BYTE   1
                10  00203          .BYTE   16
00000005        05  00204          .LONG   5
00000000'       00  00208          .ADDRESS P.AFH
              0000  0020C REFERENCEND:
                                   .WORD   0
                    0020E          .BLKB   2
              8000  00210 RELSYMVAL:
                                   .WORD   -32768
                01  00212          .BYTE   1
                04  00213          .BYTE   4
00000004        04  00214          .LONG   4
00000000'       00  00218          .ADDRESS P.AFI
              8008  0021C RELOC_PRE:
                                   .WORD   -32760
                01  0021E          .BYTE   1
                04  0021F          .BYTE   4
00000004        04  00220          .LONG   4
00000000'       00  00224          .ADDRESS P.AFJ
              8004  00228 UNIV_PRE:
                                   .WORD   -32764
                01  0022A          .BYTE   1
                04  0022B          .BYTE   4
00000004        04  0022C          .LONG   4
00000000'       00  00230          .ADDRESS P.AFK
              8000  00234 REL_UNI_PRE:
                                   .WORD   -32756
                01  00236          .BYTE   1
                04  00237          .BYTE   4
00000004        04  00238          .LONG   4
00000000'       00  0023C          .ADDRESS P.AFL
              C000  00240 EXT_PRE:.WORD   -16384
                01  00242          .BYTE   1
                04  00243          .BYTE   4
00000004        04  00244          .LONG   4
00000000'       00  00248          .ADDRESS P.AFM
              C008  0024C REL_EXT_PRE:
                                   .WORD   -16376
                01  0024E          .BYTE   1
                04  0024F          .BYTE   4
00000004        04  00250          .LONG   4
00000000'       00  00254          .ADDRESS P.AFN
              0000  00258 RELSYMVALEND:
```

```
                                                                .WORD   0                                               ;

                                                                .PSECT  $GLOBAL$,NOEXE,2

                                                        00000 LNK$GQ_ENDTIM::
                                                                .BLKB   8
                                                        00008 LNK$GB_LINESPP::
                                                                .BLKB   1
                                                        00009           .BLKB   3
                                             00000006   0000C LNK$GL_MAXSYMSZ::
                                                                .LONG   6                                               ;
                                             00000009   00010 LNK$GL_MAXMODSZ::
                                                                .LONG   9                                               ;
                                             00000000   00014 LNK$AL_SYTBLFMT::
                                                                .LONG   0                                               ;
                                             00000000   00018           .LONG   0                                       ;
                                         00  00  00  00  0001C          .BYTE   0, 0, 0, 0                              ;
                                             00000000   00020          .LONG   0                                       ;
                                    00000000 00000000   00024          .LONG   0, 0                                    ;
                                             00006400   0002C          .LONG   25600                                   ;
                                             00000032   00030          .LONG   50                                      ;
00000000  00000000  00000000  00000000  00000000  00000000  00034          .LONG   0, 0, 0, 0, 0, 0, 0, 0                  ;
                                    00000000 00000000   0004C                                                          ;
00000000' 00000000' 00000000' 00000000' 00000000V 00000000V 00054          .ADDRESS CRFERROR, LNK$CRFOUT, SYMBOLFIELD, -   ;
                                    00000000' 00000000' 0006C                    SPACEFIELD, VALUEFIELD, VALUEFLAGS, -  ;
                                                                                 REFNCEFLAGS, REFERENCER                ;
                                             00000000   00074 LNK$AL_VALCTLTB::                                        ;
                                                                .LONG   0                                               ;
                                             00000000   00078          .LONG   0                                       ;
                                         00  00  00  01  0007C          .BYTE   1, 0, 0, 0                              ;
                                             00000000   00080          .LONG   0                                       ;
                                    00000000 00000000   00084          .LONG   0, 0                                    ;
                                             00006400   0008C          .LONG   25600                                   ;
                                             00000032   00090          .LONG   50                                      ;
00000000  00000000  00000000  00000000  00000000  00000000  00094          .LONG   0, 0, 0, 0, 0, 0, 0, 0                  ;
                                    00000000 00000000   000AC                                                          ;
00000000' 00000000' 00000000' 00000000' 00000000V 00000000V 000B4          .ADDRESS CRFERROR, LNK$CRFOUT, VALUEFIELD, -    ;
                                    00000000' 00000000' 000CC                    SPACEFIELD, SPACEFIELD, SPACEFIELD, -  ;
                                                                                 RELSYMVAL, SYMBOLFIELD                 ;

                                                        ISD$C_SIZE==            88
                                                        HDR$K_FILLCHR==         255
                                                        IHD$K_SHR==             2
                                                        IHD$K_ACTIVOFF==        48
                                                        IHD$K_SYMDBGOFF==       68
                                                        IHD$K_IMGIDOFF==        88
                                                        IHD$K_PATCHOFF==        168
                                                        IHD$K_MAXLENGTH==       168
                                                        HDR$K_MINFILL==         2
                                                        LEN$C_MAPLINE==         132
                                                        LEN$C_LNGNAM==          30
                                                        ALIGNBYTE=              P.ABM
                                                        ALIGNWORD=              P.ABN
                                                        ALIGNLONG=              P.ABO
                                                        ALIGNQUAD=              P.ABP
                                                        ALIGN2=                 P.ABQ
                                                        ALIGNPAGE=              P.ABR
```

```
BLANKS=             P.ABS
HYPHENS=            P.ABT
HYPHEN_R=           P.ABU
P_HYPHEN=           P.ABV
PIC=                P.ABW
LIB=                P.ABX
OVR=                P.ABY
REL=                P.ABZ
GBL=                P.ACA
VEC=                P.ACB
SHR=                P.ACC
EXE=                P.ACD
RD=                 P.ACE
WRT=                P.ACF
NOPIC=              P.ACG
USR=                P.ACH
CON=                P.ACI
ABS=                P.ACJ
LCL=                P.ACK
NOVEC=              P.ACL
NOSHR=              P.ACM
NOEXE=              P.ACN
NORD=               P.ACO
NOWRT=              P.ACP
EXEIMAGE=           P.ACQ
SYSIMAGE=           P.ACR
SHRIMAGE=           P.ACS
BRIEFMAP=           P.ACT
ALLTIME=            P.ACU
NEVER=              P.ACV
EQUAL=              P.ACW
LSSEQUAL=           P.ACX
DEFAULTMAP=         P.ACY
LONGMAP=            P.ACZ
CREFMAP=            P.ADA
READWRITE=          P.ADB
READONLY=           P.ADC
DEMANDZERO=         P.ADD
COPYONREF=          P.ADE
ADDRDATA=           P.ADF
FIXUPSECTION=       P.ADG
CHARDEF_STR=        P.ADH
UNDEF_STR=          P.ADI
UNIV_STR=           P.ADJ
EXT_STR=            P.ADK
RELOC_STR=          P.ADL
WEAK_STR=           P.ADM
PROTECT_STR=        P.ADN
STR_POINTER=        P.ADO
ISTR_POINTER=       P.ADP
IMAGESECTIONS=      P.ADQ
PSECTHDR=           P.ADR
OBJMODHDR=          P.ADS
OMDADRHDR=          P.ADT
LINKWIDEHDR=        P.ADU
SYMBYNAME=          P.ADV
SYMBOLCREF=         P.ADW
```

```
;  SYMBYVALUE=          P.ADX
;  LINKSTATS=           P.ADY
;  ISDTXT=              P.AET
                .EXTRN  LNK$CLOSEFILE, CRF$OUT
                .EXTRN  SYS$FAO, LNK$FILNAMDSC
                .EXTRN  LIB$TRAVERSE_TREE
                .EXTRN  LIB$LP_LINES, LIB$TRIM_FILESPEC
                .EXTRN  SYS$GETTIM, LNK$STATSOUT
                .EXTRN  LIN$_CRFERR, LIN$_CLOSEOUT
                .EXTRN  LIN$_FAOFAIL, LIN$_OPENOUT
                .EXTRN  LIN$_WRITEERR, LNK$GL_FILESLEFT
                .EXTRN  LNK$GT_JPILST, LNK$GL_OMDADRLST
                .EXTRN  LNK$GL_NADROMD, LNK$GL_MATCHID
                .EXTRN  LNK$GB_MATCHCTL
                .EXTRN  LNK$GL_INRELNAM
                .EXTRN  LNK$GL_RELNAM_MAP
                .EXTRN  LNK$GB_LOCNOV_MAP
                .EXTRN  LNK$GL_CTLMSK, LNK$GL_CURFIL
                .EXTRN  LNK$GL_IMGFIL, LNK$GL_MAPFIL
                .EXTRN  LNK$GL_ERRLIST, LNK$GQ_STARTIM
                .EXTRN  LNK$AW_VERSION, LNK$GW_HDRBLKS
                .EXTRN  LNK$GW_IMGBLKS, LNK$GL_CURCLU
                .EXTRN  LNK$GL_FIXISD, LNK$GL_CLULST
                .EXTRN  LNK$GL_MAPLST, LNK$GL_MAXVA
                .EXTRN  LNK$GL_MINVA, LNK$GL_ADREFS
                .EXTRN  LNK$GL_SHRSYMS, LNK$GW_STACK
                .EXTRN  LNK$GW_NFILES, LNK$GW_NMODULES
                .EXTRN  LNK$GW_NPSECTS, LNK$GW_NSYMBOLS
                .EXTRN  LNK$GW_NCROSRFS
                .EXTRN  LNK$GW_NUDFSYMS
                .EXTRN  LNK$GL_TFRADR, LNK$GL_DBGTFR
                .EXTRN  LNK$GL_OTSEPDSC
                .EXTRN  LNK$GW_NISECTS, LNK$GL_TFRPSC
                .EXTRN  LNK$GL_DBGTFPS, LNK$GT_IMGNAM
                .EXTRN  LNK$GT_IMGID, SYS$GETJPI
                .EXTRN  SYS$CREATE, SYS$CONNECT

                .PSECT  $CODE$,NOWRT,2

                                        0FFC 00000      .ENTRY  LNK$MAPINIT, Save R2,R3,R4,R5,R6,R7,R8,R9,- ; 1091
                                                                R10,R11
                5B 00000000G    00   9E 00002          MOVAB   LNK$GL_MAPFIL, R11                          ;
                5A 00000000G    00   9E 00009          MOVAB   LNK$FILNAMDSC, R10                          ;
                59 00000000'    EF   9E 00010          MOVAB   P.AFO, R9                                   ;
                58 00000000G    00   9E 00017          MOVAB   LNK$GL_CTLMSK, R8                           ;
                57 00000000'    EF   9E 0001E          MOVAB   MAPESTIM, R7                                ;
                5E      B0      AE   9E 00025          MOVAB   -80(SP), SP                                 ;
                56              6B   D0 00029          MOVL    LNK$GL_MAPFIL, R6                           ; 1140
          10    A7      26      A6   9E 0002C          MOVAB   38(R6), AUXFNB                              ;
                50 00000000G    00   3C 00031          MOVZWL  LNK$GW_NMODULES, R0                         ; 1141
                50              04   C6 00038          DIVL2   #4, R0                                      ;
                67      07      A0   9E 0003B          MOVAB   7(R0), MAPESTIM                             ;
    36    01    A8              01   E0 0003F          BBS     #1, LNK$GL_CTLMSK+1, 4$                     ; 1143
                                63   95 00044          TSTB    LNK$GL_CTLMSK                               ; 1145
                                0D   18 00046          BGEQ    1$                                          ;
                50 00000000G    00   3C 00048          MOVZWL  LNK$GW_NCROSRFS, R0                         ; 1146
                50              14   C6 0004F          DIVL2   #20, R0                                     ;
```

```
                                 67                50  C0 00052          ADDL2   R0, MAPESTIM
                                 50 00000000G      00  3C 00055 1$:      MOVZWL  LNK$GW_NSYMBOLS, R0                     1148
                                 50                10  C6 0005C          DIVL2   #16, R0
                                 51 00000000G      00  3C 0005F          MOVZWL  LNK$GW_NPSECTS, R1
                                 50                51  C0 00066          ADDL2   R1, SYMPSCADDER
                                 07          01    A8  E9 00069          BLBC    LNK$GL_CTLMSK+1, 2$                     1149
                                 50          00 B740   3E 0006D          MOVAW   @MAPESTIM[SYMPSCADDER], R0              1150
                                                   03  11 00072          BRB     3$
                                 50                67  C0 00074 2$:      ADDL2   MAPESTIM, R0                            1151
                                 67                50  D0 00077 3$:      MOVL    R0, MAPESTIM                            1149
0050  8F                  00     6E                00  2C 0007A 4$:      MOVC5   #0, (SP), #0, #80, $RMS_PTR             1171
                                 6E                    00081
                                 6E           5003 8F  B0 00082          MOVW    #20483, $RMS_PTR
                              10 AE                67  D0 00087          MOVL    MAPESTIM, $RMS_PTR+16
                              16 AE                01  90 0008B          MOVB    #1, $RMS_PTR+22
                              1E AE           0202 8F  B0 0008F          MOVW    #514, $RMS_PTR+30
                                 51             10 A7  D0 00095          MOVL    AUXFNB, R1
                              28 AE                51  D0 00099          MOVL    R1, $RMS_PTR+40
                              2C AE                10  A6 D0 0009D        MOVL    16(R6), $RMS_PTR+44
                                 52 00000000G      00  9A 000A2          MOVZBL  LNK$GB_LOCNOV_MAP, R2
                                 05                52  E9 000A9          BLBC    R2, 5$
                                 50                69  9E 000AC          MOVAB   P.AFO, R0
                                                   04  11 000AF          BRB     6$
                                 50             04 A9  9E 000B1 5$:      MOVAB   P.AFP, R0
                              30 AE                50  D0 000B5 6$:      MOVL    R0, $RMS_PTR+48
                              34 AE             0C A6  90 000B9          MOVB    12(R6), $RMS_PTR+52
                                 05                52  E9 000BE          BLBC    R2, 7$
                                 50                04  D0 000C1          MOVL    #4, R0
                                                   03  11 000C4          BRB     8$
                                 50                0F  D0 000C6 7$:      MOVL    #15, R0
                              35 AE                50  90 000C9 8$:      MOVB    R0, $RMS_PTR+53
                                 06                52  E9 000CD          BLBC    R2, 9$                                  1173
                              07 AE                20  8A 000D0          BICB2   #32, MAPFAB+7                           1174
                                                   04  11 000D4          BRB     10$
                              07 AE                20  88 000D6 9$:      BISB2   #32, MAPFAB+7                          1175
                              54 A7                6E  9E 000DA 10$:     MOVAB   MAPFAB, MAPRAB+60                       1177
                                 50                67  D0 000DE          MOVL    MAPESTIM, R0                            1178
                                 08                50  D1 000E1          CMPL    R0, #8
                                                   03  1B 000E4          BLEQU   11$
                                 50                08  D0 000E6          MOVL    #8, R0
                              4F A7                50  90 000E9 11$:     MOVB    R0, MAPRAB+55
                              10 A1 00000000G      00  D0 000ED          MOVL    LNK$GL_RELNAM_MAP, 16(R1)               1179
                                                   7E  7C 000F5          CLRQ    -(SP)                                   1181
                                                   7E  D4 000F7          CLRL    -(SP)
                                    00000000G      00  9F 000F9          PUSHAB  LNK$GT_JPILST
                                                   7E  7C 000FF          CLRQ    -(SP)
                                                   7E  D4 00101          CLRL    -(SP)
00000000G                     00                   07  FB 00103          CALLS   #7, SYS$GETJPI
                                 03 00000000G      00  D1 0010A          CMPL    LNK$GL_FILESLEFT, #3                    1182
                                                   07  14 00111          BGTR    12$
00000000G                     00                   00  FB 00113          CALLS   #0, LNK$CLOSEFILE                       1183
                                                   5E  DD 0011A 12$:     PUSHL   SP                                      1184
00000000G                     00                   01  FB 0011C          CALLS   #1, SYS$CREATE
                              14 A7                50  D0 00123          MOVL    R0, RMSERROR
                                 52          0C    AE  D0 00127          MOVL    MAPFAB+12, RMSSTV                       1185
                                 16          14    A7  E9 0012B          BLBC    RMSERROR, 13$                           1186
                                             18    A7  9F 0012F          PUSHAB  MAPRAB                                  1188
```

```
                    00000000G  00              01  FB 00132          CALLS   #1, SYS$CONNECT                                  ;
                          14   A7              50  D0 00139          MOVL    RO, RMSERROR                                    ;
                               52        24    A7  D0 0013D          MOVL    MAPRAB+12, RMSSTV                               ; 1189
                               1D        14    A7  E8 00141          BLBS    RMSERROR, 14$                                   ; 1190
                                         52    DD 00145 13$:         PUSHL   RMSSTV                                          ; 1194
                                         14    A7 DD 00147           PUSHL   RMSERROR                                        ;
                                         08    AE 9F 0014A           PUSHAB  MAPFAB                                          ; 1193
                               6A              01  FB 0014D          CALLS   #1, LNK$FILNAMDSC                               ;
                                               50  DD 00150          PUSHL   RO                                              ;
                                               01  DD 00152          PUSHL   #1                                              ;
                                   00000000G   8F  DD 00154          PUSHL   #LIN$_OPENOUT                                   ;
                    00000000G  00              05  FB 0015A          CALLS   #5, LIB$SIGNAL                                  ;
                                               04  00161            RET                                                     ; 1192
                          5C   A7        02    AE  B0 00162 14$:     MOVW    MAPFAB+2, MAPIFI                                ; 1199
                               68              20  88 00167          BISB2   #32, LNK$GL_CTLMSK                              ; 1200
                                               5E  DD 0016A          PUSHL   SP                                              ; 1201
                               6A              01  FB 0016C          CALLS   #1, LNK$FILNAMDSC                               ;
                               51              6B  D0 0016F          MOVL    LNK$GL_MAPFIL, R1                               ; 1202
                        14     A1              60  08 28 00172       MOVC3   #8, (R0), 20(R1)                                ;
                               50  00000000G   00  D0 00177          MOVL    LNK$GL_IMGFIL, RO                               ; 1207
                                               0A  13 0017E          BEQL    15$                                             ;
                          04   A7        0C    A0  3C 00180          MOVZWL  12(RO), IMAGEFILENAME                           ; 1209
                          08   A7        10    A0  D0 00185          MOVL    16(RO), IMAGEFILENAME+4                         ; 1210
                    00000000G  00              00  FB 0018A 15$:     CALLS   #0, LIB$LP_LINES                                ; 1216
                00000000'      EF              50  08 83 00191       SUBB3   #8, RO, LNR$GB_LINESPP                          ;
                                         0C    A7  D4 00199          CLRL    PSECTNAMELINE                                   ; 1217
                          C4   A7              01  7D 0019C          MOVQ    #1, PAGENUM                                     ; 1219
                    00000000V  EF              00  FB 001A0          CALLS   #0, NEWPAGE                                     ; 1221
                               38              50  E9 001A7          BLBC    RO, 18$                                         ;
                                         F9C8  C9  9F 001AA          PUSHAB  OBJMODHDR                                       ; 1222
                    00000000V  EF              01  FB 001AE          CALLS   #1, MAPBOX                                      ;
                               2A              50  E9 001B5          BLBC    RO, 18$                                         ;
                               52  00000000G   00  D0 001B8          MOVL    LNK$GL_ERRLIST, EBLOCK                          ; 1227
                                               16  13 001BF 16$:     BEQL    17$                                             ; 1229
                               7E        04    A2  3C 001C1          MOVZWL  4(EBLOCK), -(SP)                                ; 1231
                                         06    A2  9F 001C5          PUSHAB  6(EBLOCK)                                       ;
                    00000000V  EF              02  FB 001C8          CALLS   #2, LNK$MAPOUT                                  ;
                               53              62  D0 001CF          MOVL    (EBLOCK), SAVEBLOCK                             ; 1232
                               52              53  D0 001D2          MOVL    SAVEBLOCK, EBLOCK                               ; 1233
                                               E8  11 001D5          BRB     16$                                             ; 1229
                                         FBA8  C9  9F 001D7 17$:     PUSHAB  OBJMODSUBHDR                                    ; 1236
                    00000000V  EF              01  FB 001DB          CALLS   #1, MAPSUBHDR                                   ;
                                               04  001E2 18$:        RET                                                     ; 1238

; Routine Size:  483 bytes,    Routine Base:  $CODE$ + 0000

;  676          1239  1
```

```
;  678          1240  1 routine trimfail (errcode) : novalue =
;  679          1241  2     begin
;  680          1242  2 !
;  681          1243  2 !       THIS ROUTINE IS CALLED FOR ANY FAILURE RETURN FROM LIB$TRIM_FILESPEC
;  682          1244  2 !
;  683          1245  2     signal (lin$_faofail, 0, .errcode);         !& need new message
;  684          1246  2     return;
;  685          1247  1     end;


                                        0000 00000 TRIMFAIL:
                                                           .WORD   Save nothing                    ; 1240
                                    04   AC  DD 00002          PUSHL   ERRCODE                         ; 1245
                                         7E  D4 00005          CLRL    -(SP)                           ;
                               00000000G 8F  DD 00007          PUSHL   #LIN$_FAOFAIL                   ;
                          00000000G  00      03  FB 0000D      CALLS   #3, LIB$SIGNAL                  ;
                                             04  00014        RET                                     ; 1247

; Routine Size:  21 bytes,    Routine Base:  $CODE$ + 01E3
```

```
;  687          1248  1 routine faofail (fao_errcode) : novalue =
;  688          1249  2     begin
;  689          1250  2 !
;  690          1251  2 !       THIS ROUTINE IS CALLED FOR ANY FAILURE RETURN FROM FAO
;  691          1252  2 !
;  692          1253  2     signal (lin$_faofail, 0, .fao_errcode);
;  693          1254  2     return;
;  694          1255  1     end;


                                        0000 00000 FAOFAIL:.WORD   Save nothing                    ; 1248
                                 04     AC   DD 00002          PUSHL   FAO_ERRCODE                ; 1253
                                        7E   D4 00005          CLRL    -(SP)                      ;
                              00000000G 8F   DD 00007          PUSHL   #LIN$_FAOFAIL              ;
                    00000000G   00       03   FB 0000D          CALLS   #3, LIB$SIGNAL             ;
                                             04 00014          RET                                ; 1255

; Routine Size:  21 bytes,    Routine Base:  $CODE$ + 01F8
```

```
;  696          1256  1 routine crferror (errorcode) : novalue =
;  697          1257  2     begin
;  698          1258  2 !
;  699          1259  2 !       THIS ROUTINE IS CALLED BY THE CROSS REFERENCE PROGRAM WHENEVER
;  700          1260  2 !       IT INCURRS AN ERROR. THE ROUTINE MERELY PRINTS A DIAGNOSTIC MESSAGE
;  701          1261  2 !
;  702          1262  2     signal (lin$_crferr, 0, .errorcode);        ! OUTPUT DIAGNOSTIC
;  703          1263  2     return;
;  704          1264  1     end;


                                        0000 00000 CRFERROR:
                                                           .WORD   Save nothing                    ; 1256
                                    04   AC  DD 00002       PUSHL   ERRORCODE                       ; 1262
                                         7E  D4 00005       CLRL    -(SP)                           ;
                               00000000G 8F  DD 00007       PUSHL   #LIN$_CRFERR                    ;
                          00000000G  00      03  FB 0000D   CALLS   #3, LIB$SIGNAL                  ;
                                             04  00014     RET                                     ; 1264

; Routine Size:  21 bytes,    Routine Base:  $CODE$ + 020D
```

```
;  706          1265  1 routine mapfail : novalue =                    ! ROUTINE TO REPORT MAP I/O FAILURE
;  707          1266  1
;  708          1267  1 !++
;  709          1268  1 ! FUNCTIONAL DESCRIPTION:
;  710          1269  1 !
;  711          1270  1 ! THIS ROUTINE REPORTS A MAP I/O FAILURE, THEN CLOSES THE FILE CLEARING
;  712          1271  1 ! THE APPROPRIATE CONTROL BIT TO ENSURE NO MORE ATTEMPTS TO WRITE.
;  713          1272  1 !
;  714          1273  1 ! FORMAL PARAMETERS:
;  715          1274  1 !
;  716          1275  1 !       NONE
;  717          1276  1 !
;  718          1277  1 ! IMPLICIT INPUTS:
;  719          1278  1 !
;  720          1279  1 !       NONE
;  721          1280  1 !
;  722          1281  1 ! IMPLICIT OUTPUTS:
;  723          1282  1 !
;  724          1283  1 !       THE MAP FILE IS CLOSED FOR OUTPUT.
;  725          1284  1 !
;  726          1285  1 ! ROUTINE VALUE:
;  727          1286  1 !
;  728          1287  1 !       NOVALUE
;  729          1288  1 !
;  730          1289  1 ! COMPLETION CODES:
;  731          1290  1 !
;  732          1291  1 !       NONE
;  733          1292  1 !
;  734          1293  1 ! SIDE EFFECTS:
;  735          1294  1 !
;  736          1295  1 !       NONE
;  737          1296  1 !
;  738          1297  1 !--
;  739          1298  2     begin
;  740          1299  2     lnk$gl_ctlmsk [lnk$v_mapopn] = false;        ! TURN OFF MAP OPEN FLAG
;  741          1300  2     signal (lin$_writeerr, 1,                    ! REPORT MAP I/O FAILURE
;  742          1301  2         lnk$gl_mapfil [fdb$q_filename], .rmserror, .maprab [rab$l_stv]);
;  743          1302  2     lnk$closmapfil ();                           ! THEN CLOSE THE FILE, IF POSSIBLE
;  744          1303  2     return;
;  745          1304  1     end;


                                                0000 00000 MAPFAIL:.WORD   Save nothing                                  ; 1265
                        00C00000G   00          20   8A 00002          BICB2   #32, LNK$GL_CTLMSK                      ; 1299
                                    00000000'   EF   DD 00009          PUSHL   MAPRAB+12                               ; 1301
                                    00000000'   EF   DD 0000F          PUSHL   RMSERROR
                              7E    00000000G   00   14   C1 00015     ADDL3   #20, LNK$GL_MAPFIL, -(SP)
                                                01   DD 0001D          PUSHL   #1
                                    00000000G   8F   DD 0001F          PUSHL   #LIN$_WRITEERR
                        00000000G   00          05   FB 00025          CALLS   #5, LIB$SIGNAL
                        00000000V   EF          00   FB 0002C          CALLS   #0  LNK$CLOSMAPFIL                      ; 1302
                                                04 00033              RET                                             ; 1304

; Routine Size:  52 bytes,    Routine Base:  $CODE$ + 0222
```

; 746   1305 1

```
;  748          1306  1 global routine lnk$closmapfil : novalue =
;  749          1307  1 !
;  750          1308  1
;  751          1309  1 !++
;  752          1310  1 ! FUNCTIONAL DESCRIPTION:
;  753          1311  1 !
;  754          1312  1 ! THIS ROUTINE CLOSES THE MAP FILE
;  755          1313  1 !
;  756          1314  1 ! FORMAL PARAMETERS:
;  757          1315  1 !
;  758          1316  1 !       NONE
;  759          1317  1 !
;  760          1318  1 ! IMPLICIT INPUTS:
;  761          1319  1 !
;  762          1320  1 !       LNK$GL_MAPFIL = POINTER TO MAP FILE DESCRIPTOR BLOCK
;  763          1321  1 !       AUXFNB        =     "       " AUXILIARY FILENAME BLOCK
;  764          1322  1 !       MAPIFI        = INTERNAL FILE IDENTIFIER
;  765          1323  1 !
;  766          1324  1 ! IMPLICIT OUTPUTS:
;  767          1325  1 !
;  768          1326  1 !       THE MAP FILE IS CLOSED FOR OUTPUT.
;  769          1327  1 !
;  770          1328  1 ! ROUTINE VALUE:
;  771          1329  1 !
;  772          1330  1 !       NOVALUE
;  773          1331  1 !                                                                                       ;
;  774          1332  1 ! COMPLETION CODES:
;  775          1333  1 !
;  776          1334  1 !       NONE                                                                            ;
;  777          1335  1 !
;  778          1336  1 ! SIDE EFFECTS:
;  779          1337  1 !
;  780          1338  1 !       NONE
;  781          1339  1 !
;  782          1340  1 !--
;  783          1341  2     begin
;  784          1342  2
;  785          1343  2     local
;  786          1344  2         mapfab : block [fab$c_bln, byte],          ! FAB FOR THE CLOSE
;  787          1345  2         closerror;                                 ! ERROR CODE RETURNED BY RMS ON CLOSE
;  788          1346  2
;  789          1347  2     if .mapifi neq 0                               ! IF THE MAP FILE IS STILL OPEN,
;  790          1348  2     then
;  791          1349  3         begin
;  792          1350  3         $fab_init (fab = mapfab, fop = tef);
;  793          1351  3         mapfab [fab$w_ifi] = .mapifi;              ! INSERT THE SAVED FILE ID
;  794          1352  3
;  795          1353  4         if (closerror = $wait (rab = maprab))      ! WAIT FOR POSSIBLE ASYNCHRONOUS OUTPUT
;  796          1354  3         then
;  797          1355  4             begin                                  ! AND IF OK
;  798          1356  4             lnk$gl_ctlmsk [lnk$v_mapopn] = false;      ! TURN OFF THE CONTROL BIT
;  799          1357  4
;  800          1358  5             if (closerror = $close (fab = mapfab))     ! ATTEMPT THE CLOSE AND IF IT
;  801          1359  4             then
;  802          1360  5                 begin                              ! SUCCEEDS
;  803          1361  5                 mapifi = 0;                        ! WE ARE ALL DONE
;  804          1362  5                 return;
```

```
;  805          1363  4                end;
;  806          1364  4
;  807          1365  3            end;                                ! BUT IF ANYTHING
;  808          1366  3
;  809          1367  3        signal (lin$_closeout, 1,               ! FAILS, ISSUE THE ERROR MESSAGE BUT
;  810          1368  3            lnk$gl_mapfil [fdb$q_filename], .closerror, .mapfab [fab$l_stv]);
;  811          1369  3        mapifi = 0;                             ! AND CLOSE IS COMPLETE
;  812          1370  2        end;
;  813          1371  2
;  814          1372  2    return;
;  815          1373  1    end;


                                                        .EXTRN  SYS$WAIT, SYS$CLOSE

                                        00FC 00000      .ENTRY  LNK$CLOSMAPFIL, Save R2,R3,R4,R5,R6,R7      ; 1306
                            57 00000000'  EF  9E 00002  MOVAB   MAPIFI, R7
                            5E        B0  AE  9E 00009  MOVAB   -80(SP), SP
                            56            67  3C 0000D  MOVZWL  MAPIFI, R6                                 ; 1347
                                          5F  13 00010  BEQL    3$
    0050   8F          00                6E  00  2C 00012  MOVC5   #0, (SP), #0, #80, $RMS_PTR             ; 1350
                                          6E      00019
                                6E   5003 8F  B0  0001A  MOVW    #20483, $RMS_PTR
                          04    AE 10000000 8F  D0  0001F  MOVL    #268435456, $RMS_PTR+4
                          16    AE          02  90  00027  MOVB    #2, $RMS_PTR+22
                          1F    AE          02  90  0002B  MOVB    #2, $RMS_PTR+31
                          02    AE          56  B0  0002F  MOVW    R6, MAPFAB+2                            ; 1351
                                      BC    A7  9F  00033  PUSHAB  MAPRAB                                  ; 1353
                     00000000G    00        01  FB  00036  CALLS   #1, SYS$WAIT
                                  13        50  E9  0003D  BLBC    CLOSERROR, 1$
                     00000000G    00        20  8A  00040  BICB2   #32, LNK$GL_CTLMSK                    ; 1356
                                            5E  DD  00047  PUSHL   SP                                     ; 1358
                     00000000G    00        01  FB  00049  CALLS   #1, SYS$CLOSE
                                  1C        50  E8  00050  BLBS    CLOSERROR, 2$
                                      0C    AE  DD  00053  1$:    PUSHL   MAPFAB+12                       ; 1368
                                            50  DD  00056  PUSHL   CLOSERROR
                  7E 00000000G    00        14  C1  00058  ADDL3   #20, LNK$GL_MAPFIL, -(SP)
                                            01  DD  00060  PUSHL   #1
                                 00000000G  8F  DD  00062  PUSHL   #LIN$_CLOSEOUT
                     00000000G    00        05  FB  00068  CALLS   #5, LIB$SIGNAL
                                            67  B4  0006F  2$:    CLRW    MAPIFI                          ; 1369
                                                04  00071  3$:    RET                                     ; 1373

; Routine Size:  114 bytes,    Routine Base:  $CODE$ + 0256

;  816          1374  1
```

```
;  818          1375  1 global routine lnk$mapmhd (objrec, objmoddsc) : novalue =       ! ROUTINE TO COLLECT MHD INFORMATION
;  819          1376  1
;  820          1377  1 !++
;  821          1378  1 ! FUNCTIONAL DESCRIPTION:
;  822          1379  1 !
;  823          1380  1 ! THIS ROUTINE EXTRACTS THE INFORMATION CONTAINED IN THE MODULE HEADER
;  824          1381  1 ! RECORD AND CREATES A PART OF AN OUTPUT LINE FOR THE OBJECT MODULE SYNOPSIS
;  825          1382  1 ! SECTION.  THE ROUTINE, LNK$MAPLNG, WILL INSERT THE LANGUAGE PROCESSOR
;  826          1383  1 ! INFORMATION AND ACTUALLY WRITE THE LINE.  THE INPUT PARAMETERS INCLUDE
;  827          1384  1 ! THE ADDRESSES OF THE MODULE HEADER RECORD AND THE OBJECT MODULE
;  828          1385  1 ! TABLE ENTRY.
;  829          1386  1 !
;  830          1387  1 ! FORMAL PARAMETERS:
;  831          1388  1 !
;  832          1389  1 !       OBJREC    -- THE ADDRESS OF THE OBJECT MODULE HEADER RECORD
;  833          1390  1 !                      (SUB-HEADER BYTE)
;  834          1391  1 !       OBJMODDSC -- THE ADDRESS OF THE OBJECT MODULE DESCRIPTOR
;  835          1392  1 !
;  836          1393  1 ! IMPLICIT INPUTS:
;  837          1394  1 !
;  838          1395  1 !       THE NECESSARY LINKER TABLES MUST BE ALREADY SET UP.
;  839          1396  1 !
;  840          1397  1 ! IMPLICIT OUTPUTS:
;  841          1398  1 !
;  842          1399  1 !       THE OUTPUT LINE IS BUILT SAVE FOR THE CREATOR DATA.
;  843          1400  1 !
;  844          1401  1 ! ROUTINE VALUE:
;  845          1402  1 !
;  846          1403  1 !       NOVALUE
;  847          1404  1 !
;  848          1405  1 ! COMPLETION CODES:
;  849          1406  1 !
;  850          1407  1 !       NONE
;  851          1408  1 !
;  852          1409  1 ! SIDE EFFECTS:
;  853          1410  1 !
;  854          1411  1 !       NONE
;  855          1412  1 !
;  856          1413  1 !--
;  857          1414  2 begin
;  858          1415  2 literal
;  859          1416  2     filnam_lng = 37 - 1 ;                                  ! FILENAME OUTPUT FIELD SIZE
;  860          1417  2
;  861          1418  2 local
;  862          1419  2     cre8date,                                              ! ADDRESS OF CREATION DATE
;  863          1420  2     fao_errcode,                                           ! FAO ERROR CODE
;  864          1421  2     modident    : ref vector [, byte],                     ! REFERENCE TO MODULE IDENT
;  865          1422  2     filnam      : block [8,byte],                          ! FILE NAME DESCRIPTOR
;  866          1423  2     filnam_buf  : block [filnam_lng,byte] ;                ! BUFFER FOR TRIMMED FILENAME
;  867          1424  2
;  868          1425  2 map
;  869          1426  2     objmoddsc   : ref block  [, byte],                     ! REFERENCE TO OBJ MOD DESCRIPTOR
;  870          1427  2     objrec      : ref vector [, byte] ;                    ! REFERENCE TO OBJECT MODULE HEADER RECORD
;  871          1428  2
;  872          1429  2 bind
;  873          1430  2     mhdrec    = .objrec         : block [, byte],          ! NAME OBJECT RECORD AS MODULE HEADER RECORD
;  874          1431  2     objauxfnb = lnk$gl_curfil [fdb$t_auxfnb]               ! THE AUXILIARY FILENAME BLOCK OF CURRENT OBJ
```

```
;  875          1432  2                                : block [nam$c_bln, byte] ;
;  876          1433  2
;  877          1434  2 !
;  878          1435  2 lastomd    = .objmoddsc ;                                  ! SAVE ADDRESS OF OBJ MODULE DESCRIPTOR
;  879          1436  2 modident   = mhdrec [mhd$b_namlng] + .mhdrec [mhd$b_namlng] + 1 ; ! GET OFFSET TO VERSION
;  880          1437  2 cre8date   = modident [0] + .modident [0] + 1   ;          ! GET OFFSET TO CREATION DATE
;  881          1438  2 outdes [0] = len$c_mapline ;                               ! RESET OUTPUT BUFFER DESCRIPTOR
;  882          1439  2 outdes [1] = outline ;                                    ! POINT TO FIRST CHARACTER OF OUTPUT LINE
;  883          1440  2
;  884          1441  2
;  885          1442  2 if .objauxfnb [nam$b_rsl] lequ filnam_lng
;  886          1443  2 then
;  887          1444  2     !
;  888          1445  2     !   NO NEED TO TRIM FILE SPEC
;  889          1446  2     !
;  890          1447  3     begin
;  891          1448  3     filnam [dsc$w_length]  = .objauxfnb [nam$b_rsl] ;
;  892          1449  3     filnam [dsc$a_pointer] = .objauxfnb [nam$l_rsa] ;
;  893          1450  3     end
;  894          1451  2 else
;  895          1452  2     !
;  896          1453  2     !   TRIM FILE SPEC TO ALLOWABLE OUTPUT FIELD SIZE
;  897          1454  2     !
;  898          1455  3     begin
;  899          1456  3     local       status,
;  900          1457  3                 size,
;  901          1458  3                 rs_nam : vector [2] ;
;  902          1459  3
;  903          1460  3     rs_nam [0] = .objauxfnb [nam$b_rsl] ;
;  904          1461  3     rs_nam [1] = .objauxfnb [nam$l_rsa] ;
;  905          1462  3
;  906          1463  3     filnam [dsc$w_length]  = filnam_lng ;
;  907          1464  3     filnam [dsc$b_dtype]   = dsc$k_dtype_t ;
;  908          1465  3     filnam [dsc$b_class]   = dsc$k_class_s ;
;  909          1466  3     filnam [dsc$a_pointer] = filnam_buf ;
;  910          1467  3
;  911          1468  4     if (status = lib$trim_filespec (rs_nam, filnam, %ref (filnam_lng), size))
;  912          1469  3     then
;  913          1470  3         filnam [dsc$w_length] = .size
;  914          1471  3     else
;  915          1472  3         trimfail (.status) ;
;  916          1473  2     end ;
;  917          1474  2
;  918          1475  2 if .mhdrec [mhd$b_namlng] lequ sym$c_shortname
;  919          1476  2 then
;  920          1477  2     !
;  921          1478  2     !   MODULE HAS SHORT NAME
;  922          1479  2     !
;  923          1480  3     begin
;  924          1481  3     if .modident [0] lequ sym$c_shortname
;  925          1482  3     then
;  926          1483  4         begin
;  927          1484  4         fao_errcode =
;  928          1485  4             sys$fao (objmd_cntrl_str, outsize, outdes
;  929          1486  4                     ,mhdrec [mhd$b_namlng]
;  930          1487  4                     ,modident [0]
;  931          1488  4                     ,.objmoddsc [omd$l_alloc]
```

```
;   932          1489  4                    ,.filnam [dsc$w_length], .filnam [dsc$a_pointer]
;   933          1490  4                    ,date_fld_lng, .cre8date
;   934          1491  4                    )
;   935          1492  4            end
;   936          1493  3        else
;   937          1494  4            begin
;   938          1495  5            if (fao_errcode = sys$fao (objmd_cntrl_st1, outsize, outdes, mhdrec [mhd$b_namlng]))
;   939          1496  4            then
;   940          1497  5                begin
;   941          1498  5                lnk$mapout (outline, .outsize) ;
;   942          1499  5                outdes [0] = len$c_mapline ;
;   943          1500  5                outdes [1] = outline ;
;   944          1501  5                fao_errcode =
;   945          1502  5                    sys$fao (objmd_cntrl_st2, outsize, outdes
;   946          1503  5                            ,modident [0]
;   947          1504  5                            ,.objmoddsc [omd$l_alloc]
;   948          1505  5                            ,.filnam [dsc$w_length], .filnam [dsc$a_pointer]
;   949          1506  5                            ,date_fld_lng, .cre8date
;   950          1507  5                            )
;   951          1508  4                end ;
;   952          1509  3            end ;
;   953          1510  3        end
;   954          1511  2    else
;   955          1512  2        !
;   956          1513  2        !   MODULE HAS LONG NAME
;   957          1514  2        !
;   958          1515  3        begin
;   959          1516  4        if (fao_errcode = sys$fao (objmd_cntrl_st1, outsize, outdes, mhdrec [mhd$b_namlng]))
;   960          1517  3        then
;   961          1518  4            begin
;   962          1519  4            lnk$mapout (outline, .outsize) ;                    ! OUTPUT MODULE NAME
;   963          1520  4            outdes [0] = len$c_mapline ;                        ! RESET
;   964          1521  4            outdes [1] = outline ;
;   965          1522  4
;   966          1523  4            if .modident [0] lequ sym$c_shortname
;   967          1524  4            then
;   968          1525  4                fao_errcode =
;   969          1526  4                    sys$fao (objmd_cntrl_str, outsize, outdes
;   970          1527  4                            ,blanks
;   971          1528  4                            ,modident [0]
;   972          1529  4                            ,.objmoddsc [omd$l_alloc]
;   973          1530  4                            ,.filnam [dsc$w_length], .filnam [dsc$a_pointer]
;   974          1531  4                            ,date_fld_lng, .cre8date
;   975          1532  4                            )
;   976          1533  4            else
;   977          1534  4                fao_errcode =
;   978          1535  4                    sys$fao (objmd_cntrl_st2, outsize, outdes
;   979          1536  4                            ,modident [0]
;   980          1537  4                            ,.objmoddsc [omd$l_alloc]
;   981          1538  4                            ,.filnam [dsc$w_length], .filnam [dsc$a_pointer]
;   982          1539  4                            ,date_fld_lng, .cre8date
;   983          1540  4                            )
;   984          1541  3            end ;
;   985          1542  2        end ;
;   986          1543  2
;   987          1544  2    if not .fao_errcode
;   988          1545  2    then
```

```
;  989          1546  2      faofail (.fao_errcode)
;  990          1547  2  else
;  991          1548  3      begin
;  992          1549  3      outdes [1] = outline + .outsize ;                    ! POINT TO CREATOR FIELD
;  993          1550  3      outdes [0] = .outdes [0] - .outsize ;
;  994          1551  2      end ;
;  995          1552  1  end ;
```

```
                                        0FFC 00000          .ENTRY  LNK$MAPMHD, Save R2,R3,R4,R5,R6,R7,R8,R9,-      ; 1375
                                                                    R10,R11
                                5B 00000000V    EF  9E 00002    MOVAB   LNK$MAPOUT, R11                             ;
                                5A 00000000G    00  9E 00009    MOVAB   SYS$FAO, R10                                ;
                                59 00000000'    EF  9E 00010    MOVAB   OBJMD_CNTRL_ST1, R9                         ;
                                58 00000000     EF  9E 00017    MOVAB   OUTDES, R8                                  ;
                                5E                  3C  C2 0001E    SUBL2   #60, SP                                 ;
                      51 00000000G  00              26  C1 00021    ADDL3   #38, LNK$GL_CURFIL, R1                  ; 1431
                                52        04        AC  7D 00029    MOVQ    OBJREC, R2                              ; 1430
                                70        A8              53  D0 0002D    MOVL    R3, LASTOMD                     ; 1435
                                50        05        A2  9A 00031    MOVZBL  5(R2), R0                               ; 1436
                                54        06      A240  9F 00035    MOVAB   6(R2)[R0], MODIDENT                     ;
                                56                  64  9A 0003A    MOVZBL  (MODIDENT), R6                          ; 1437
                                57        01      A644  9E 0003D    MOVAB   1(R6)[MODIDENT], CREBDATE               ;
                                68        84        8F  9A 00042    MOVZBL  #132, OUTDES                            ; 1438
                                04        A8      FF7C  C8 9E 00046    MOVAB   OUTLINE, OUTDES+4                  ; 1439
                                24        03        A1  91 0004C    CMPB    3(R1), #36                              ; 1442
                                                    0C  1A 00050    BGTRU   1$                                      ;
                                34        AE      03  A1 9B 00052    MOVZBW  3(R1), FILNAM                           ; 1448
                                38        AE      04  A1 D0 00057    MOVL    4(R1), FILNAM+4                         ; 1449
                                                    3F  11 0005C    BRB     3$                                      ; 1442
                                08        AE      03  A1 9A 0005E 1$: MOVZBL  3(R1), RS_NAM                       ; 1460
                                0C        AE      04  A1 D0 00063    MOVL    4(R1), RS_NAM+4                     ; 1461
                                34        AE  010E0024  8F D0 00068    MOVL    #17694756, FILNAM                   ; 1463
                                38        AE      10  AE 9E 00070    MOVAB   FILNAM_BUF, FILNAM+4                    ; 1466
                                          04        AE  9F 00075    PUSHAB  SIZE                                    ; 1468
                                04        AE              24  D0 00078    MOVL    #36, 4(SP)                      ;
                                          04        AE  9F 0007C    PUSHAB  4(SP)                                   ;
                                          3C        AE  9F 0007F    PUSHAB  FILNAM                                  ;
                                          14        AE  9F 00082    PUSHAB  RS_NAM                                  ;
                      00000000G  00                       04  FB 00085    CALLS   #4, LIB$TRIM_FILESPEC               ;
                                07                  50  E9 0008C    BLBC    STATUS, 2$                              ;
                                34        AE        04  AE B0 0008F    MOVW    SIZE, FILNAM                        ; 1470
                                                    07  11 00094    BRB     3$                                      ;
                                                    50  DD 00096 2$: PUSHL   STATUS                                ; 1472
                                FE7E      CF            01  FB 00098    CALLS   #1, TRIMFAIL                        ;
                                0F        05        A2  91 0009D 3$: CMPB    5(R2), #15                          ; 1475
                                                    50  1A 000A1    BGTRU   6$                                      ;
                                0F                  56  91 000A3    CMPB    R6, #15                             ; 1481
                                                    21  1A 000A6    BGTRU   5$                                      ;
                                                    57  DD 000A8    PUSHL   CREBDATE                            ; 1490
                                                    11  DD 000AA    PUSHL   #17                                 ; 1487
                                          40        AE  DD 000AC    PUSHL   FILNAM+4                            ; 1489
                                7E        40        AE  3C 000AF    MOVZWL  FILNAM, -(SP)                       ;
                                          08        A3  DD 000B3    PUSHL   8(R3)                               ; 1488
```

```
                        54  DD 000B6          PUSHL   MODIDENT                        ; 1487
                     05 A2  9F 000B8          PUSHAB  5(R2)                          ; 1486
                        58  DD 000BB 4$:      PUSHL   R8                             ; 1485
                     08 A8  9F 000BD          PUSHAB  OUTSIZE                        ;
                     F0 A9  9F 000C0          PUSHAB  OBJMD_CNTRL_STR                ;
                  6A    0A  FB 000C3          CALLS   #10, SYS$FAO                   ; 1487
                      0088  31 000C6          BRW     8$                             ;
                     05 A2  9F 000C9 5$:      PUSHAB  5(R2)                          ; 1495
                        58  DD 000CC          PUSHL   R8                             ;
                     08 A8  9F 000CE          PUSHAB  OUTSIZE                        ;
                        59  DD 000D1          PUSHL   R9                             ;
                  6A    04  FB 000D3          CALLS   #4, SYS$FAO                    ;
                  55    50  D0 000D6          MOVL    R0, FAO_ERRCODE                ;
                  7B    55  E9 000D9          BLBC    FAO_ERRCODE, 9$                ;
                  7E  08 A8  3C 000DC          MOVZWL  OUTSIZE, -(SP)                 ; 1498
                   FF7C C8  9F 000E0          PUSHAB  OUTLINE                        ;
                  6B    02  FB 000E4          CALLS   #2, LNK$MAPOUT                 ;
                  68  84 8F  9A 000E7          MOVZBL  #132, OUTDES                   ; 1499
               04 A8  FF7C C8  9E 000EB       MOVAB   OUTLINE, OUTDES+4              ; 1500
                        43  11 000F1          BRB     7$                             ; 1506
                     05 A2  9F 000F3 6$:      PUSHAB  5(R2)                          ; 1516
                        58  DD 000F6          PUSHL   R8                             ;
                     08 A8  9F 000F8          PUSHAB  OUTSIZE                        ;
                        59  DD 000FB          PUSHL   R9                             ;
                  6A    04  FB 000FD          CALLS   #4, SYS$FAO                    ;
                  55    50  D0 00100          MOVL    R0, FAO_ERRCODE                ;
                  51    55  E9 00103          BLBC    FAO_ERRCODE, 9$                ;
                  7E  08 A8  3C 00106          MOVZWL  OUTSIZE, -(SP)                 ; 1519
                   FF7C C8  9F 0010A          PUSHAB  OUTLINE                        ;
                  6B    02  FB 0010E          CALLS   #2, LNK$MAPOUT                 ;
                  68  84 8F  9A 00111          MOVZBL  #132, OUTDES                   ; 1520
               04 A8  FF7C C8  9E 00115       MOVAB   OUTLINE, OUTDES+4              ; 1521
                  0F    56  91 0011B          CMPB    R6, #15                        ; 1523
                        16  1A 0011E          BGTRU   7$                             ;
                        57  DD 00120          PUSHL   CRE8DATE                       ; 1531
                        11  DD 00122          PUSHL   #17                            ; 1528
                     40 AE  DD 00124          PUSHL   FILNAM+4                       ; 1530
                  7E 40 AE  3C 00127          MOVZWL  FILNAM, -(SP)                  ;
                     08 A3  DD 0012B          PUSHL   8(R3)                          ; 1529
                        54  DD 0012E          PUSHL   MODIDENT                       ; 1528
                   055C C9  9F 00130          PUSHAB  BLANKS                         ; 1526
                        85  11 00134          BRB     4$                             ;
                        57  DD 00136 7$:      PUSHL   CRE8DATE                       ; 1539
                        11  DD 00138          PUSHL   #17                            ; 1536
                     40 AE  DD 0013A          PUSHL   FILNAM+4                       ; 1538
                  7E 40 AE  3C 0013D          MOVZWL  FILNAM, -(SP)                  ;
                     08 A3  DD 00141          PUSHL   8(R3)                          ; 1537
                        54  DD 00144          PUSHL   MODIDENT                       ; 1536
                        58  DD 00146          PUSHL   R8                             ; 1535
                     08 A8  9F 00148          PUSHAB  OUTSIZE                        ;
                     20 A9  9F 0014B          PUSHAB  OBJMD_CNTRL_ST2                ;
                  6A    09  FB 0014E          CALLS   #9, SYS$FAO                    ; 1536
                  55    50  D0 00151 8$:      MOVL    R0, FAO_ERRCODE                ;
                  08    55  E8 00154          BLBS    FAO_ERRCODE, 10$               ; 1544
                        55  DD 00157 9$:      PUSHL   FAO_ERRCODE                    ; 1546
              FDD2  CF    01  FB 00159          CALLS   #1, FAOFAIL                    ;
                        04 0015E              RET                                    ;
```

```
                        50      FF7C    C8  9E 0015F 10$:    MOVAB   OUTLINE, R0                    ; 1549
                        51        08    A8  3C 00164         MOVZWL  OUTSIZE, R1                     ;
                     04   A8          50  C1 00168         ADDL3   R1, R0, OUTDES+4                ;
                        50        08    A8  3C 0016D         MOVZWL  OUTSIZE, R0                     ; 1550
                        68              50  C2 00171         SUBL2   R0, OUTDES                      ;
                                        04 00174             RET                                     ; 1552

; Routine Size:  373 bytes,    Routine Base:  $CODE$ + 02C8

;  996          1553  1
```

```
;  998          1554  1 global routine lnk$maping (langaddr, langlen) : novalue =       ! ROUTINE TO OUTPUT LANGUAGE PROCESSOR DATA
;  999          1555  1
; 1000          1556  1 !++
; 1001          1557  1 ! FUNCTIONAL DESCRIPTION:
; 1002          1558  1 !
; 1003          1559  1 ! THIS ROUTINE TAKES INFORMATION FROM THE LANGUAGE PROCESSOR SUB-HEADER
; 1004          1560  1 ! RECORD AND INSERTS IT INTO THE OBJECT MODULE OUTPUT LINE.  THIS OUTPUT
; 1005          1561  1 ! LINE IS THEN WRITTEN TO THE MAP.
; 1006          1562  1 !
; 1007          1563  1 ! FORMAL PARAMETERS:
; 1008          1564  1 !
; 1009          1565  1 !       LANGADDR -- ADDRESS OF THE LANGUAGE PROCESSOR NAME STRING
; 1010          1566  1 !       LANGLEN -- LENGTH OF THE LANGUAGE PROCESSOR NAME STRING
; 1011          1567  1 !
; 1012          1568  1 !
; 1013          1569  1 ! IMPLICIT INPUTS:
; 1014          1570  1 !
; 1015          1571  1 !       THE MAIN BODY OF THE OBJECT MODULE OUTPUT LINE IS ALREADY BUILT.
; 1016          1572  1 !
; 1017          1573  1 ! IMPLICIT OUTPUTS:
; 1018          1574  1 !
; 1019          1575  1 !       THE OBJECT MODULE OUTPUT LINE IS WRITTEN TO THE MAP FILE.
; 1020          1576  1 !
; 1021          1577  1 ! ROUTINE VALUE:
; 1022          1578  1 !
; 1023          1579  1 !       NOVALUE
; 1024          1580  1 !
; 1025          1581  1 ! COMPLETION CODES:
; 1026          1582  1 !
; 1027          1583  1 !       NONE
; 1028          1584  1 !
; 1029          1585  1 ! SIDE EFFECTS:
; 1030          1586  1 !
; 1031          1587  1 !       THE LANGUAGE NAME WILL BE TRUNCATED TO THE MAXIMUM ALLOWED LENGTH
; 1032          1588  1 !               AS DEFINED BY ''LEN$C_LNGNAM''
; 1033          1589  1 !
; 1034          1590  1 !--
; 1035          1591  2     begin
; 1036          1592  2
; 1037          1593  2     local
; 1038          1594  2         eblock : ref block [, byte],            ! POINTER TO ERROR TEXT BLOCK
; 1039          1595  2         nextblock : ref block [, byte],         ! TEMPORARY POINTER
; 1040          1596  2         fao_errcode;                            ! FAO ERROR CODE
; 1041          1597  2
; 1042          1598  3     if not (fao_errcode = sys$fao (creat_cntrl_str, outsize, outdes,    ! FORMAT LINE
; 1043          1599  3             min (len$c_lngnam, .langlen), .langaddr))   ! TRUNCATING TO MAXIMUM ALLOWED LENGTH
; 1044          1600  2     then
; 1045          1601  2         faofail (.fao_errcode);                 ! FAO FAILURE
; 1046          1602  2
; 1047          1603  2     outsize = .outsize + .outdes [1] - outline; ! CALCULATE TOTAL LINE SIZE
; 1048          1604  2     lnk$mapout (outline, .outsize);             ! OUTPUT LINE
; 1049          1605  2     outdes [0] = len$c_mapline;                 ! RESET THE OUTPUT BUFFER DESCRIPTOR
; 1050          1606  2     outdes [1] = outline;                       ! FOR NEXT USAGE
; 1051          1607  2 !
; 1052          1608  2 ! IF THERE IS ANY ERROR TEXT STASHED AWAY TO PRINT NOW, THEN DO IT
; 1053          1609  2 !
; 1054          1610  2     if (eblock = .lastomd [omd$l_errtxt]) neq 0 ! IF THERE IS TEXT TO PRINT
```

```
;  1055          1611  2     then
;  1056          1612  2
;  1057          1613  2         while .eblock neq 0                     ! THEN PRINT IT ALL
;  1058          1614  2         do
;  1059          1615  3             begin
;  1060          1616  3             lnk$mapout (eblock [oeb$t_text], .eblock [oeb$w_bytcnt]);   ! PRINT A MESSAGE
;  1061          1617  3             nextblock = .eblock [oeb$l_nxtoeb]; ! GET ADDRESS OF NEXT TEXT BLOCK
;  1062          1618  3             eblock = .nextblock;                ! AND GO AGAIN
;  1063          1619  2             end;
;  1064          1620  2
;  1065          1621  2     lastomd [omd$l_errtxt] = 0;                 ! CLEAR ERRTXT FIELD (USED AS NXTADR DURING PASS 2)
;  1066          1622  2     lastomd [omd$l_lsterr] = 0;                 ! CLEAR LSTERR FIELD (WHICH IS ALSO ADRCNT DURING PASS 2)
;  1067          1623  2     return;                                     ! NO MORE TO DO
;  1068          1624  1     end;

                                003C 00000         .ENTRY  LNK$MAPLNG, Save R2,R3,R4,R5                    ; 1554
                    55 00000000V   EF   9E 00002   MOVAB   LNK$MAPOUT, R5                                  ;
                    54 00000000'   EF   9E 00009   MOVAB   OUTSIZE, R4                                     ;
                             04    AC   DD 00010   PUSHL   LANGADDR                                        ; 1599
                             08    AC   DD 00013   PUSHL   LANGLEN                                         ;
                    1E             6E   D1 00016   CMPL    (SP), #30                                       ;
                                   03   15 00019   BLEQ    1$                                              ;
                    6E             1E   D0 0001B   MOVL    #30, (SP)                                       ;
                             F8    A4   9F 0001E 1$:       PUSHAB  OUTDES                                  ; 1598
                                   54   DD 00021   PUSHL   R4                                              ;
                        00000000'  EF   9F 00023   PUSHAB  CREAT_CNTRL_STR                                 ;
                00000000G   00             05   FB 00029   CALLS   #5, S^S$FAO                            ;
                            07             50   E8 00030   BLBS    FAO_ERRCODE, 2$                         ;
                                           50   DD 00033   PUSHL   FAO_ERRCODE                             ; 1601
                        FD81   CF          01   FB 00035   CALLS   #1, FAOFAIL                            ;
                            51             64   3C 0003A 2$:       MOVZWL  OUTSIZE, R1                     ; 1603
                            51         FC  A4   C0 0003D   ADDL2   OUTDES+4, R1                            ;
                            50       FF74  C4   9E 00041   MOVAB   OUTLINE, R0                             ;
                    64      51             50   A3 00046   SUBW3   R0, R1, OUTSIZE                        ;
                            7E             64   3C 0004A   MOVZWL  OUTSIZE, -(SP)                         ; 1604
                                     FF74  C4   9F 0004D   PUSHAB  OUTLINE                                 ;
                            65             02   FB 00051   CALLS   #2, LNK$MAPOUT                         ;
                         F8 A4         84  8F   9A 00054   MOVZBL  #132, OUTDES                            ; 1605
                         FC A4       FF74  C4   9E 00059   MOVAB   OUTLINE, OUTDES+4                       ; 1606
                            50         68  A4   D0 0005F   MOVL    LASTOMD, R0                             ; 1610
                            52         20  A0   D0 00063   MOVL    32(R0), EBLOCK                          ;
                                           12   13 00067 3$:       BEQL    4$                              ; 1613
                            7E         04  A2   3C 00069   MOVZWL  4(EBLOCK), -(SP)                       ; 1616
                                       06  A2   9F 0006D   PUSHAB  6(EBLOCK)                               ;
                            65             02   FB 00070   CALLS   #2, LNK$MAPOUT                         ;
                            53             62   D0 00073   MOVL    (EBLOCK), NEXTBLOCK                     ; 1617
                            52             53   D0 00076   MOVL    NEXTBLOCK, EBLOCK                       ; 1618
                                           EC   11 00079   BRB     3$                                      ; 1613
                            50         68  A4   D0 0007B 4$:       MOVL    LASTOMD, R0                     ; 1621
                                       20  A0   7C 0007F   CLRQ    32(R0)                                  ;
                                           04   00082     RET                                             ; 1624

; Routine Size:  131 bytes,    Routine Base:  $CODE$ + 043D
```

; 1069 1625 1

```
;1071     1626  1 global routine lnk$mapadromd : novalue =
;1072     1627  2     begin
;1073     1628  2
;1074     1629  2 !++
;1075     1630  2 ! THIS ROUTINE PRINTS THE OBJECT MODULE ADDRESS DATA SYNOPSIS.
;1076     1631  2 ! IT IS ONLY PRINTED IF CREATING A SHAREABLE IMAGE AND A FULL
;1077     1632  2 ! MAP HAS BEEN GENERATED.
;1078     1633  2 !
;1079     1634  2 !--
;1080     1635  2     local
;1081     1636  2         desc : block [dsc$c_s_bln, byte],
;1082     1637  2         status,
;1083     1638  2         outlen,
;1084     1639  2         omdnum,
;1085     1640  2         omdptr : ref block [, byte];
;1086     1641  2
;1087     1642  2 !
;1088     1643  2 ! IF NOTHING TO PRINT THEN RETURN
;1089     1644  2 !
;1090     1645  2     if .lnk$gl_nadromd eql 0 then return;
;1091     1646  2
;1092     1647  2 !
;1093     1648  2 ! PRINT A BLANK LINE, FOLLOWED BY THE BOXED HEADER, AND
;1094     1649  2 ! THEN THE SUB-HEADER
;1095     1650  2 !
;1096     1651  2
;1097     1652  2     if .linecnt + 10 gtr .lnk$gb_linespp        ! ENSURE ROOM FOR HEADER, SUBHEADER AND FIRST LINE OF TEXT
;1098     1653  2     then
;1099     1654  3         begin
;1100     1655  3         linecnt = .lnk$gb_linespp;
;1101     1656  3
;1102     1657  3         if not lnk$mapout (outline, 0) then return;
;1103     1658  3
;1104     1659  2         end;
;1105     1660  2
;1106     1661  2     if not newline () or not mapbox (omdadrhdr) or not mapsubhdr (omdadrsubhdr) then return;
;1107     1662  2 !
;1108     1663  2 ! OUTPUT THE INFO
;1109     1664  2 !
;1110     1665  2     omdnum = 0;
;1111     1666  2     outlen = 0;
;1112     1667  2     ch$move (dsc$c_s_bln, outdes, desc);
;1113     1668  2     omdptr = .lnk$gl_omdadrlst;
;1114     1669  2
;1115     1670  2     while .omdptr neq 0 do
;1116     1671  3         begin
;1117     1672  3
;1118     1673  4         if not (status = sys$fao (omdadrstr, outlen, desc, omdptr [omd$b_namlng], .omdptr [omd$l_adrcnt]))
;1119     1674  3         then
;1120     1675  3             faofail (.status);
;1121     1676  3
;1122     1677  3         desc [dsc$w_length] = .desc [dsc$w_length] - .outlen;
;1123     1678  3         desc [dsc$a_pointer] = .desc [dsc$a_pointer] + .outlen;
;1124     1679  3         omdnum = .omdnum + 1;
;1125     1680  3
;1126     1681  3         if .omdnum eql 3                        ! IF 3 ON LINE, OUTPUT AND RESET
;1127     1682  3         then
```

```
;  1128          1683  4              begin
;  1129          1684  4
;  1130          1685  4              if not lnk$mapout (outline, len$c_mapline - .desc [dsc$w_length]) then return;
;  1131          1686  4
;  1132          1687  4              omdnum = 0;
;  1133          1688  4              ch$move (dsc$c_s_bln, outdes, desc);
;  1134          1689  3              end;
;  1135          1690  3
;  1136          1691  3          omdptr = .omdptr [omd$l_nxtadr];
;  1137          1692  2          end;
;  1138          1693  2
;  1139          1694  2      if .omdnum neq 0 then lnk$mapout (outline, len$c_mapline - .desc [dsc$w_length]);
;  1140          1695  2
;  1141          1696  2      return;
;  1142          1697  1      end;


                                                  0FFC 00000          .ENTRY  LNK$MAPADROMD, Save R2,R3,R4,R5,R6,R7,R8,-      ; 1626
                                                                              R9,R10,R11
                                      5B 00000000'  EF  9E 00002      MOVAB   OMDADRHDR, R11                                  ;
                                      5A 00000000V  EF  9E 00009      MOVAB   LNK$MAPOUT, R10                                 ;
                                      59 00000000'  EF  9E 00010      MOVAB   OUTLINE, R9                                     ;
                                      5E            0C  C2 00017      SUBL2   #12, SP                                         ;
                                         00000000G  00  D5 0001A      TSTL    LNK$GL_NADROMD                                  ; 1645
                                                    01  12 00020      BNEQ    1$                                              ;
                                                        04 00022      RET                                                     ;
                                50      00B8        C9              0A  C1 00023 1$:    ADDL3   #10, LINECNT, R0            ; 1652
                50 00000000'    EF                  08              00  ED 00029        CMPZV   #0, #8, LNK$GB_LINESPP, R0  ;
                                                                    13  18 00032        BGEQ    2$                          ;
                                        00B8        C9 00000000'    EF  9A 00034        MOVZBL  LNK$GB_LINESPP, LINECNT      ; 1655
                                                                    7E  D4 0003D        CLRL    -(SP)                       ; 1657
                                                                    59  DD 0003F        PUSHL   R9                          ;
                                                    6A              02  FB 00041        CALLS   #2, LNK$MAPOUT              ;
                                                    7C              50  E9 00044        BLBC    R0, 5$                      ;
                                            00000000V   EF          00  FB 00047 2$:    CALLS   #0, NEWLINE                 ; 1661
                                                    72              50  E9 0004E        BLBC    R0, 5$                      ;
                                                                    5B  DD 00051        PUSHL   R11                         ;
                                            00000000V   EF          01  FB 00053        CALLS   #1, MAPBOX                  ;
                                                    66              50  E9 0005A        BLBC    R0, 5$                      ;
                                                        027D        CB  9F 0005D        PUSHAB  OMDADRSUBHDR                ;
                                            00000000V   EF          01  FB 00061        CALLS   #1, MAPSUBHDR               ;
                                                    58              50  E9 00068        BLBC    R0, 5$                      ;
                                                                    57  D4 0006B        CLRL    OMDNUM                      ; 1665
                                                                    6E  D4 0006D        CLRL    OUTLEN                      ; 1666
                    04  AE      0084        C9                  08  28 0006F        MOVC3   #8, OUTDES, DESC            ; 1667
                                            56 00000000G        00  D0 00076        MOVL    LNK$GL_OMDADRLST, OMDPTR    ; 1668
                                                                56  13 0007D 3$:     BEQL    7$                          ; 1670
                                                          24    A6  DD 0007F        PUSHL   36(OMDPTR)                  ; 1673
                                                          28    A6  9F 00082        PUSHAB  40(OMDPTR)                  ;
                                                          0C    AE  9F 00085        PUSHAB  DESC                        ;
                                                          0C    AE  9F 00088        PUSHAB  OUTLEN                      ;
                                                        F8A1    CB  9F 0008B        PUSHAB  OMDADRSTR                   ;
                                            00000000G   00              05  FB 0008F        CALLS   #5, SYS$FAO             ;
                                                    58              50  D0 00096        MOVL    R0, STATUS              ;
```

```
                         07              58  E8 00099          BLBS    STATUS, 4$                                  ;
                                         58  DD 0009C          PUSHL   STATUS                                      ; 1675
                      FC95   CF          01  FB 0009E          CALLS   #1, FAOFAIL
                        04   AE          6E  A2 000A3 4$:      SUBW2   OUTLEN, DESC                                ; 1677
                        08   AE          6E  C0 000A7          ADDL2   OUTLEN, DESC+4                              ; 1678
                                         57  D6 000AB          INCL    OMDNUM                                      ; 1679
                         03              57  D1 000AD          CMPL    OMDNUM, #3                                  ; 1681
                                         1D  12 000B0          BNEQ    6$
                         7E        04    AE  3C 000B2          MOVZWL  DESC, -(SP)                                 ; 1685
                 6E 00000084       8F    6E  C3 000B6          SUBL3   (SP), #132, (SP)
                                         59  DD 000BE          PUSHL   R9
                         6A              02  FB 000C0          CALLS   #2, LNK$MAPOUT
                         24              50  E9 000C3 5$:      BLBC    R0, 8$
                                         57  D4 000C6          CLRL    OMDNUM                                      ; 1687
              04   AE        0084       C9  08  28 000C8          MOVC3   #8, OUTDES, DESC                            ; 1688
                         56        20    A6  D0 000CF 6$:      MOVL    32(OMDPTR), OMDPTR                          ; 1691
                                         A8  11 000D3          BRB     3$                                          ; 1670
                                         57  D5 000D5 7$:      TSTL    OMDNUM                                      ; 1694
                                         11  13 000D7          BEQL    8$
                         7E        04    AE  3C 000D9          MOVZWL  DESC, -(SP)
                 6E 00000084       8F    6E  C3 000DD          SUBL3   (SP), #132, (SP)
                                         59  DD 000E5          PUSHL   R9
                         6A              02  FB 000E7          CALLS   #2, LNK$MAPOUT
                                             04 000EA 8$:      RET                                                 ; 1697

; Routine Size:  235 bytes,    Routine Base:  $CODE$ + 04C0

; 1143          1698  1
```

```
;  1145          1699  1 global routine lnk$mappscts : novalue =          ! ROUTINE TO OUTPUT PSECT SYNOPSIS
;  1146          1700  1
;  1147          1701  1 !++
;  1148          1702  1 ! FUNCTIONAL DESCRIPTION:
;  1149          1703  1 !
;  1150          1704  1 ! FORMAL PARAMETERS:
;  1151          1705  1 !
;  1152          1706  1 !       NONE
;  1153          1707  1 !
;  1154          1708  1 ! IMPLICIT INPUTS:
;  1155          1709  1 !
;  1156          1710  1 !       THE PSECT TABLES MUST HAVE ALREADY BEEN COMPLETED.
;  1157          1711  1 !       THE OBJECT MODULE TABLES AND THE CURRENT FILE DESCRIPTOR MUST
;  1158          1712  1 !       BE AVAILABLE.
;  1159          1713  1 !
;  1160          1714  1 ! IMPLICIT OUTPUTS:
;  1161          1715  1 !
;  1162          1716  1 !       NONE
;  1163          1717  1 !
;  1164          1718  1 ! ROUTINE VALUE:
;  1165          1719  1 !
;  1166          1720  1 !       NOVALUE
;  1167          1721  1 !
;  1168          1722  1 ! COMPLETION CODES:
;  1169          1723  1 !
;  1170          1724  1 !       NONE
;  1171          1725  1 !
;  1172          1726  1 ! SIDE EFFECTS:
;  1173          1727  1 !
;  1174          1728  1 !       NONE
;  1175          1729  1 !
;  1176          1730  1 !--
;  1177          1731  1
;  1178          1732  2 begin
;  1179          1733  2         routine print_psect (node) =
;  1180          1734  2         !
;  1181          1735  2         ! ROUTINE CALLED TO PRINT ONE PSECT
;  1182          1736  2         !
;  1183          1737  3         begin
;  1184          1738  3         map     node : ref block [, byte];
;  1185          1739  3
;  1186          1740  3         bind    psectaddr = .node [node$l_ptr] : block [, byte];
;  1187          1741  3
;  1188          1742  3         local   psctcontr       : ref block [, byte],
;  1189          1743  3                 psctowner       : ref block [, byte],
;  1190          1744  3                 psectnamebuf    : block [len$c_mapline, byte],  ! BUFFER FOR LAST PSECT SUMMARY LINE
;  1191          1745  3                 fao_errcode,                                    ! FAO ERROR CODE
;  1192          1746  3                 psectoffset,                                    ! MODULE CONTR BASE ADDR
;  1193          1747  3                 psectend,                                       ! END ADDRESS OF PSECT
;  1194          1748  3                 psectbase;                                      ! BASE ADDRESS OF PSECT
;  1195          1749  3
;  1196          1750  3         !
;  1197          1751  3         ! OUTPUT PSECT SECTION LINES TO MAP.
;  1198          1752  3         !
;  1199          1753  3         if  (.psectaddr [psc$w_flags] and gps$m_rel) neq 0      ! PROVIDED THAT IT IS RELOCATABLE
;  1200          1754  4         and (.psectaddr [psc$w_flags] and (gps$m_lib or psc$m_supres))  ! AND NOT FROM SHR LIB
;  1201          1755  4                 neq (gps$m_lib or psc$m_supres)                 ! SPECIALLY DEFINED PSECT
```

```
;  1202          1756  4          and (if .lnk$gl_ctlmsk [lnk$v_long]                          ! PROVIDED IT IS LONG MAP
;  1203          1757  5               then (if newline ()                                     ! OUTPUT A NEW LINE
;  1204          1758  5                     then true
;  1205          1759  5                     else return false
;  1206          1760  5                    )
;  1207          1761  4               else   if not .psectaddr [psc$v_supres]               ! OR THE P-SECTION
;  1208          1762  4                         and .psectaddr [psc$l_length] neq 0           ! IS NOT EMPTY AND
;  1209          1763  4                     then true                                         ! IS NOT SUPPRESSD
;  1210          1764  4                     else false
;  1211          1765  4               )
;  1212          1766  3           then
;  1213          1767  4               begin
;  1214          1768  4               psectnameline = 0;                                    ! ZERO IN CASE OF NEW PAGE
;  1215          1769  4               psectbase     = .psectaddr [psc$l_base];              ! REMEMBER BASE ADDR
;  1216          1770  4               psectend      = .psectbase + .psectaddr [psc$l_length]; ! CALCULATE END ADDR
;  1217          1771  4
;  1218          1772  5               if (.psectaddr [psc$l_length] neq 0)
;  1219          1773  4               then psectend = .psectend - 1;                        ! CALCULATE END ADDR
;  1220          1774  4
;  1221          1775  5               alignment = (case .psectaddr [psc$b_align]            ! FIND ALIGNMENT ASCIC
;  1222          1776  5                                 from 0 to 9 of                      ! STRING ADDRESS
;  1223          1777  5                                     set
;  1224          1778  5                                     [0]      : alignbyte;         ! BYTE ALIGNED
;  1225          1779  5                                     [1]      : alignword;         ! WORD ALIGNED
;  1226          1780  5                                     [2]      : alignlong;         ! LONGWORD ALIGNED
;  1227          1781  5                                     [3]      : alignquad;         ! QUAD WORD ALIGNED
;  1228          1782  5                                     [4 to 8] : align2;            ! OTHER ALIGNED
;  1229          1783  5                                     [9]      : alignpage;         ! PAGE ALIGNED
;  1230          1784  5                                     tes
;  1231          1785  4                                );                                 ! GOT ALIGNMENT
;  1232          1786  4
;  1233          1787  5               args [0] = (if (.psectaddr [psc$w_flags] and gps$m_pic) eql 0       ! DECIDE IF PSECT IS
;  1234          1788  5                           then nopic                                ! NOT POSITION INDEPENDENT,
;  1235          1789  4                           else pic);                                ! OR IS POSITION INDEPENDENT
;  1236          1790  5               args [1] = (if (.psectaddr [psc$w_flags] and gps$m_lib) eql 0       ! DECIDE IF PSECT IS
;  1237          1791  5                           then usr                                  ! DEFINED BY THE USER
;  1238          1792  4                           else lib);                                ! OR FROM A LIBRARY
;  1239          1793  5               args [2] = (if (.psectaddr [psc$w_flags] and gps$m_ovr) eql 0       ! DECIDE IF PSECT IS
;  1240          1794  5                           then con                                  ! CONCATENATED
;  1241          1795  4                           else ovr);                                ! OR OVERLAID
;  1242          1796  5               args [3] = (if (.psectaddr [psc$w_flags] and gps$m_rel) eql 0       ! DECIDE IF PSECT IS
;  1243          1797  5                           then abs                                  ! ABSOLUTE
;  1244          1798  4                           else rel);                                ! OR RELOCATABLE
;  1245          1799  5               args [4] = (if (.psectaddr [psc$w_flags] and gps$m_gbl) eql 0       ! DECIDE IF PSECT IS
;  1246          1800  5                           then lcl                                  ! LOCALLY DEFINED
;  1247          1801  4                           else gbl);                                ! OR GLOBALLY DEFINED
;  1248          1802  5               args [5] = (if (.psectaddr [psc$w_flags] and gps$m_shr) eql 0       ! DECIDE IF PSECT IS
;  1249          1803  5                           then noshr                                ! NOT SHAREABLE
;  1250          1804  4                           else shr);                                ! OR IS SHAREABLE
;  1251          1805  5               args [6] = (if (.psectaddr [psc$w_flags] and gps$m_exe) eql 0       ! DECIDE IF PSECT IS
;  1252          1806  5                           then noexe                                ! NOT EXECUTABLE
;  1253          1807  4                           else exe);                                ! OR IS EXECUTABLE
;  1254          1808  5               args [7] = (if (.psectaddr [psc$w_flags] and gps$m_rd) eql 0        ! DECIDE IF PSECT IS
;  1255          1809  5                           then nord                                 ! NOT READABLE
;  1256          1810  4                           else rd);                                 ! OR IS READABLE
;  1257          1811  5               args [8] = (if (.psectaddr [psc$w_flags] and gps$m_wrt) eql 0       ! DECIDE IF PSECT IS
;  1258          1812  5                           then nowrt                                ! NOT WRITEABLE
```

```
;  1259          1813  4                    else wrt);                                          ! OR IS WRITEABLE
;  1260          1814  5          args [9] = (if (.psectaddr [psc$w_flags] and gps$m_vec) eql 0       !
;  1261          1815  5                      then novec
;  1262          1816  4                      else vec);
;  1263          1817  4
;  1264          1818  5          if not (fao_errcode =                                           ! FORMAT THE PSECT SUMMARY ALLOCATION LINE
;  1265          1819  6                      (if .psectaddr [psc$b_namlng] lequ sym$c_shortname
;  1266          1820  6                       then  sys$fao  ( psc_cntrl_str, outsize, outdes
;  1267          1821  6                                      , psectaddr [psc$b_namlng], blanks,  psectaddr [psc$l_base], .psecte
;  1268          1822  6                                      ,.psectaddr [psc$l_length], .psectaddr [psc$l_length], .alignment
;  1269          1823  6                                      ,.psectaddr [psc$b_align], .args [0], .args [1], .args [2]
;  1270          1824  6                                      ,.args [3], .args [4], .args [5], .args [6], .args [7], .args [8]
;  1271          1825  6                                      ,.args [9]
;  1272          1826  6                                      )
;  1273          1827  6                       else sys$fao   ( psc_cntrl_st1, outsize, outdes
;  1274          1828  6                                      , psectaddr [psc$b_namlng], .psectaddr [psc$l_base], .psectend
;  1275          1829  6                                      ,.psectaddr [psc$l_length], .psectaddr [psc$l_length], .alignment
;  1276          1830  6                                      ,.psectaddr [psc$b_align], .args [0], .args [1], .args [2]
;  1277          1831  6                                      ,.args [3], .args [4], .args [5], .args [6], .args [7], .args [8]
;  1278          1832  6                                      ,.args [9]
;  1279          1833  5                 )   )                )
;  1280          1834  4          then
;  1281          1835  4              faofail (.fao_errcode)
;  1282          1836  4          else
;  1283          1837  4              if not lnk$mapout (outline, .outsize)                       ! OUTPUT THE PSECT ALLOCATION SUMMAR
;  1284          1838  4              then
;  1285          1839  4                  return false;                                           ! NO MORE OUTPUT, I/O FAILURE
;  1286          1840  4
;  1287          1841  4          ch$copy (.outsize, outline, %ascii' ', len$c_mapline, psectnamebuf);
;  1288          1842  4                                                                          ! COPY PSECT SUMMARY LINE TO BUFFER
;  1289          1843  4          psectnameline =  psectnamebuf;                                  ! AND FLAG WE HAVE ONE
;  1290          1844  4          psctcontr     = .psectaddr [psc$l_mpclst];                      ! GET THE FIRST CONTRIBUTING OBJECT
;  1291          1845  4
;  1292          1846  4          while (.psctcontr neq 0) do                                     ! LOOP ONCE FOR EACH CONTRIBUTOR
;  1293          1847  5              begin
;  1294          1848  5              psectoffset = .psectbase   + .psctcontr [mpc$l_offset]; ! CALCULATE BASE OF THIS CONTRIBUTIO
;  1295          1849  5              psectend    = .psectoffset + .psctcontr [mpc$l_length]; ! CALCULATE END OF THIS CONTRIBUTION
;  1296          1850  5
;  1297          1851  6              if (.psctcontr [mpc$l_length] neq 0)
;  1298          1852  5              then psectend = .psectend - 1;                              ! CALCULATE END ADDRESS
;  1299          1853  5
;  1300          1854  6              alignment = (case .psctcontr [mpc$b_align]
;  1301          1855  6                           from 0 to 9 of                                 ! FIND ALIGNMENT OF THIS CONTRIBUTIO
;  1302          1856  6                             set
;  1303          1857  6                             [0]      : alignbyte;          ! BYTE ALIGNED
;  1304          1858  6                             [1]      : alignword;          ! WORD ALIGNED
;  1305          1859  6                             [2]      : alignlong;          ! LONGWORD ALIGNED
;  1306          1860  6                             [3]      : alignquad;          ! QUADWORD ALIGNED
;  1307          1861  6                             [4 to 8] : align2;             ! OTHER ALIGNED
;  1308          1862  6                             [9]      : alignpage;          ! PAGE ALIGNED
;  1309          1863  6                             tes                            ! GOT ALIGNMENT
;  1310          1864  5                          );
;  1311          1865  5              psctowner = .psctcontr [mpc$l_ownomd];                     ! FIND OBJ MOD NAME
;  1312          1866  5
;  1313          1867  5              if .lnk$gl_ctlmsk [lnk$v_long]                             ! IF A FULL MAP
;  1314          1868  7              or (((.psctcontr [mpc$l_length] neq 0))                    ! OR A NON ZERO CONTRIBUTION
;  1315          1869  6                   and                                                   ! FROM A MAPPED MODULE IN
```

```
;  1316          1870  6          ((.psctowner [omd$b_flags] and omd$m_mapmod)) neq 0   ! A DEFAULT MAP
;  1317          1871  6      )
;  1318          1872  5  then
;  1319          1873  6          begin                                                 ! OUTPUT THE CONTRIBUTION LINE
;  1320          1874  6          if .psctowner [omd$b_namlng] lequ sym$c_shortname
;  1321          1875  6          then fao_errcode =  sys$fao ( contrbstr, outsize, outdes
;  1322          1876  6                                      , blanks, psctowner [omd$b_namlng]
;  1323          1877  6                                      ,.psectoffset, .psectend
;  1324          1878  6                                      ,.psctcontr [mpc$l_length],.psctcontr [mpc$l_length]
;  1325          1879  6                                      ,.alignment, .psctcontr [mpc$b_align]
;  1326          1880  6                                      )
;  1327          1881  6          else fao_errcode = sys$fao  ( contrbst2, outsize, outdes
;  1328          1882  6                                      , blanks, psctowner [omd$b_namlng]
;  1329          1883  6                                      ) ;
;  1330          1884  6
;  1331          1885  6          if not .fao_errcode
;  1332          1886  6          then faofail (.fao_errcode)
;  1333          1887  6          else if not lnk$mapout (outline, .outsize)  ! OUTPUT CONTRIBUTING MODULE LINE
;  1334          1888  6               then return false;                     ! NO MORE OUTPUT, I/O FAILURE
;  1335          1889  6
;  1336          1890  6          if .psctowner [omd$b_namlng] gtru sym$c_shortname   ! IF NOT SHORTNAME
;  1337          1891  7          then begin                                          ! THEN OUTPUT REMAINDER
;  1338          1892  7               fao_errcode = sys$fao  ( contrbst3, outsize, outdes
;  1339          1893  7                                      , blanks
;  1340          1894  7                                      ,.psectoffset, .psectend, .psctcontr [mpc$l_length]
;  1341          1895  7                                      ,.psctcontr [mpc$l_length], .alignment
;  1342          1896  7                                      ,.psctcontr [mpc$b_align]
;  1343          1897  7                                      ) ;
;  1344          1898  7               if not .fao_errcode
;  1345          1899  7               then faofail (.fao_errcode)
;  1346          1900  7               else   if not lnk$mapout (outline, .outsize)   ! OUTPUT CONTRIBUTING MODULE LINE
;  1347          1901  7                      then return false;                     ! NO MORE OUTPUT, I/O FAILURE
;  1348          1902  6               end ;
;  1349          1903  5          end;
;  1350          1904  5
;  1351          1905  5           psctcontr = .psctcontr [mpc$l_nxtmpc];          ! GET NEXT CONTRIBUTING MODULE
;  1352          1906  4           end;                                            ! END THE CONTRIBUTOR LOOP
;  1353          1907  4
;  1354          1908  4          psectnameline = 0;                               ! ENSURE NO LINE PRINTED
;  1355          1909  3          end;
;  1356          1910  3      return true
;  1357          1911  2      end;


                                                OFFC 00000 PRINT_PSECT:
                                                           .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11          ; 1733
                                5B 00000000'   EF  9E 00002        MOVAB   BLANKS, R11                           ;
                                5A 00000000'   EF  9E 00009        MOVAB   OUTSIZE, R10                          ;
                                5E      FF7C   CE  9E 00010        MOVAB   -132(SP), SP                          ;
                                50        04   AC  D0 00015        MOVL    NODE, R0                              ; 1740
                                56        0A   A0  D0 00019        MOVL    10(R0), R6                            ;
                                52        0A   A6  3C 0001D        MOVZWL  10(R6), R2                            ; 1753
                          03    52             03  E0 00021        BBS     #3, R2, 2$                            ;
                                            030B  31 00025 1$:     BRW     59$                                   ;
```

```
                50                52 FFFFEFFD      8F   CB 00028 2$:      BICL3   #-4099, R2, R0                          ; 1754
                    00001002      8F                50   D1 00030         CMPL    R0, #4098                               ; 1755
                                                    EC   13 00037         BEQL    1$                                      ;
                                  0D 00000000G      00   E9 00039         BLBC    LNK$GL_CTLMSK+1, 3$                     ; 1756
                    00000000V     EF                00   FB 00040         CALLS   #0, NEQLINE                             ; 1757
                                  0D                50   E8 00047         BLBS    R0, 4$                                  ;
                                                 02EA   31 0004A         BRW     60$                                     ; 1759
                D3        0B      A6                04   E0 0004D 3$:      BBS     #4, 11(R6), 1$                          ; 1761
                                                 1C     A6   D5 00052         TSTL    28(R6)                                  ; 1762
                                                        CE   13 00055         BEQL    1$                                      ;
                                                 78     AA   D4 00057 4$:      CLRL    PSECTNAMELINE                           ; 1768
                                              59 18     A6   D0 0005A         MOVL    24(R6), PSECTBASE                       ; 1769
                                              51 1C     A6   D0 0005E         MOVL    28(R6), R1                              ; 1770
                58                            59              51   C1 00062         ADDL3   R1, PSECTBASE, PSECTEND         ;
                                                              51   D5 00066         TSTL    R1                              ; 1772
                                                              02   13 00068         BEQL    5$                              ;
                                                              58   D7 0006A         DECL    PSECTEND                        ; 1773
                09                              00    2C      A6   8F 0006C 5$:      CASEB   44(R6), #0, #9                  ; 1775
          0026          0020                  001A          0014      00071 6$:      .WORD   7$-6$,-                         ;
          002C          002C                  002C          002C      00079          8$-6$,-                         ;
                                              0032          002C      00081          9$-6$,-                         ;
                                                                                     10$-6$,-                        ;
                                                                                     11$-6$,-                        ;
                                                                                     11$-6$,-                        ;
                                                                                     11$-6$,-                        ;
                                                                                     11$-6$,-                        ;
                                                                                     11$-6$,-                        ;
                                                                                     12$-6$                          ;
                                              50              DC    AB   9E 00085 7$:      MOVAB   ALIGNBYTE, R0           ;
                                                              1C    11   00089         BRB     13$                     ;
                                              50              E2    AB   9E 0008B 8$:      MOVAB   ALIGNWORD, R0           ;
                                                              16    11   0008F         BRB     13$                     ;
                                              50              E8    AB   9E 00091 9$:      MOVAB   ALIGNLONG, R0           ;
                                                              10    11   00095         BRB     13$                     ;
                                              50              EE    AB   9E 00097 10$:     MOVAB   ALIGNQUAD, R0           ;
                                                              0A    11   0009B         BRB     13$                     ;
                                              50              F4    AB   9E 0009D 11$:     MOVAB   ALIGN2, R0              ;
                                                              04    11   000A1         BRB     13$                     ;
                                              50              FA    AB   9E 000A3 12$:     MOVAB   ALIGNPAGE, R0           ;
                          FF70                CA                  50   D0 000A7 13$:     MOVL    R0, ALIGNMENT           ;
                                              06                  52   E8 000AC         BLBS    R2, 14$                 ; 1787
                                              50              46    AB   9E 000AF         MOVAB   NOPIC, R0               ;
                                                              04    11   000B3         BRB     15$                     ;
                                              50              0A    AB   9E 000B5 14$:     MOVAB   PIC, R0                 ;
                                                    04        AA          50   D0 000B9 15$:     MOVL    R0, ARGS                ;
                06                            52                  01   E0 000BD         BBS     #1, R2, 16$             ; 1790
                                              50              4D    AB   9E 000C1         MOVAB   USR, R0                 ;
                                                              04    11   000C5         BRB     17$                     ;
                                              50              11    AB   9E 000C7 16$:     MOVAB   LIB, R0                 ;
                                                    08        AA          50   D0 000CB 17$:     MOVL    R0, ARGS+4              ;
                06                            52                  02   E0 000CF         BBS     #2, R2, 18$             ; 1793
                                              50              52    AB   9E 000D3         MOVAB   CON, R0                 ;
                                                              04    11   000D7         BRB     19$                     ;
                                              50              16    AB   9E 000D9 18$:     MOVAB   OVR, R0                 ;
                                                    0C        AA          50   D0 000DD 19$:     MOVL    R0, ARGS+8              ;
                06                            52                  03   E0 000E1         BBS     #3, R2, 20$             ; 1796
                                              50              57    AB   9E 000E5         MOVAB   ABS, R0                 ;
```

```
                                 04  11  00E9            BRB     21$                                     ;
                           50    AB  9E  00EB  20$:       MOVAB   REL, R0                                 ;
                     10    AA        50  D0  00EF  21$:    MOVL    R0, ARGS+12                             ;
                06   52              04  E0  00F3        BBS     #4, R2, 22$                             ; 1799
                           50    5C  AB  9E  00F7        MOVAB   LCL, R0                                 ;
                                 04  11  00FB            BRB     23$                                     ;
                           50    20  AB  9E  00FD  22$:    MOVAB   GBL, R0                               ;
                     14    AA        50  D0  00101 23$:    MOVL    R0, ARGS+16                           ;
                06   52              05  E0  00105       BBS     #5, R2, 24$                             ; 1802
                           50    67  AB  9E  00109       MOVAB   NOSHR, R0                               ;
                                 04  11  0010D           BRB     25$                                     ;
                           50    2B  AB  9E  0010F 24$:    MOVAB   SHR, R0                               ;
                     18    AA        50  D0  00113 25$:    MOVL    R0, ARGS+20                           ;
                06   52              06  E0  00117       BBS     #6, R2, 26$                             ; 1805
                           50    6E  AB  9E  0011B       MOVAB   NOEXE, R0                               ;
                                 04  11  0011F           BRB     27$                                     ;
                           50    32  AB  9E  00121 26$:    MOVAB   EXE, R0                               ;
                     1C    AA        50  D0  00125 27$:    MOVL    R0, ARGS+24                           ;
                                     52  95  00129       TSTB    R2                                      ; 1808
                                 06  19  0012B           BLSS    28$                                     ;
                           50    75  AB  9E  0012D       MOVAB   NORD, R0                                ;
                                 04  11  00131           BRB     29$                                     ;
                           50    39  AB  9E  00133 28$:    MOVAB   RD, R0                                ;
                     20    AA        50  D0  00137 29$:    MOVL    R0, ARGS+28                           ;
                06   52              08  E0  0013B       BBS     #8, R2, 30$                             ; 1811
                           50    7B  AB  9E  0013F       MOVAB   NOWRT, R0                               ;
                                 04  11  00143           BRB     31$                                     ;
                           50    3F  AB  9E  00145 30$:    MOVAB   WRT, R0                               ;
                     24    AA        50  D0  00149 31$:    MOVL    R0, ARGS+32                           ;
                06   52              09  E0  0014D       BBS     #9, R2, 32$                             ; 1814
                           50    61  AB  9E  00151       MOVAB   NOVEC, R0                               ;
                                 04  11  00155           BRB     33$                                     ;
                           50    25  AB  9E  00157 32$:    MOVAB   VEC, R0                               ;
                     28    AA        50  D0  0015B 33$:    MOVL    R0, ARGS+36                           ;
                     0F          2D  A6  91  0015F       CMPB    45(R6), #15                             ; 1819
                                 3C  1A  00163           BGTRU   34$                                     ;
                           7E    24  AA  7D  00165       MOVQ    ARGS+32, -(SP)                          ; 1824
                           7E    1C  AA  7D  00169       MOVQ    ARGS+24, -(SP)                          ;
                           7E    14  AA  7D  0016D       MOVQ    ARGS+16, -(SP)                          ;
                           7E    0C  AA  7D  00171       MOVQ    ARGS+8, -(SP)                           ; 1823
                           7E    04  AA  7D  00175       MOVQ    ARGS, -(SP)                             ;
                           7E    2C  A6  9A  00179       MOVZBL  44(R6), -(SP)                           ;
                               FF70  CA  DD  0017D       PUSHL   ALIGNMENT                               ; 1822
                                     51  DD  00181       PUSHL   R1                                      ;
                                     51  DD  00183       PUSHL   R1                                      ;
                                     58  DD  00185       PUSHL   PSECTEND                                ; 1821
                                   18    A6  DD  00187   PUSHL   24(R6)                                  ;
                                     5B  DD  0018A       PUSHL   R11                                     ;
                                   2D    A6  9F  0018C   PUSHAB  45(R6)                                  ;
                                   F8    AA  9F  0018F   PUSHAB  OUTDES                                  ; 1820
                                     5A  DD  00192       PUSHL   R10                                     ;
                               F9F8  CB  9F  00194       PUSHAB  PSC_CNTRL_STR                           ;
                00000000G      00        15  FB  00198   CALLS   #21, SYS$FAO                           ; 1821
                                 38  11  0019F           BRB     35$                                     ;
                           7E    24  AA  7D  001A1 34$:    MOVQ    ARGS+32, -(SP)                        ; 1831
                           7E    1C  AA  7D  001A5       MOVQ    ARGS+24, -(SP)                          ;
                           7E    14  AA  7D  001A9       MOVQ    ARGS+16, -(SP)                          ;
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                                7E      0C    AA   7D 001AD           MOVQ    ARGS+8, -(SP)                                   ; 1830
                                7E      04    AA   7D 001B1           MOVQ    ARGS, -(SP)
                                7E      2C    A6   9A 001B5           MOVZBL  44(R6), -(SP)
                                      FF70    CA   DD 001B9           PUSHL   ALIGNMENT                                       ; 1829
                                              51   DD 001BD           PUSHL   R1
                                              51   DD 001BF           PUSHL   R1
                                              58   DD 001C1           PUSHL   PSECTEND                                        ; 1828
                                        18    A6   DD 001C3           PUSHL   24(R6)
                                        2D    A6   9F 001C6           PUSHAB  45(R6)
                                        F8    AA   9F 001C9           PUSHAB  OUTDES                                          ; 1827
                                              5A   DD 001CC           PUSHL   R10
                                      FA28    CB   9F 001CE           PUSHAB  PSC_CNTRL_ST1
                          00000000G   00            14   FB 001D2           CALLS   #20, SYS$FAO                            ; 1828
                                      57            50   D0 001D9 35$:      MOVL    R0, FAO_ERRCODE
                                      09            57   E8 001DC           BLBS    FAO_ERRCODE, 36$                        ; 1819
                                                    57   DD 001DF           PUSHL   FAO_ERRCODE                             ; 1835
                                FA67  CF            01   FB 001E1           CALLS   #1, FAOFAIL
                                                    14   11 001E6           BRB     37$
                                      7E            6A   3C 001E8 36$:      MOVZWL  OUTSIZE, -(SP)                          ; 1837
                                      FF74    CA    9F   001EB           PUSHAB  OUTLINE
                          00000000V   EF            02   FB 001EF           CALLS   #2, LNK$MAPOUT
                                      03            50   E8 001F6           BLBS    R0, 37$
                                                 013B   31 001F9           BRW     60$
    0084    8F          20      FF74  CA            6A   2C 001FC 37$:      MOVC5   OUTSIZE, OUTLINE, #32, #132, PSECTNAMEBUF ; 1841
                                                    6E      00205
                                78    AA            6E   9E 00206           MOVAB   PSECTNAMEBUF, PSECTNAMELINE              ; 1843
                                      52      0C    A6   D0 0020A           MOVL    12(R6), PSCTCONTR                       ; 1844
                                              03    12   11 0020E 38$:      BNEQ    39$                                     ; 1846
                                           011D     31   00210           BRW     58$
                    55                    59      08    A2   C1 00213 39$:      ADDL3   8(PSCTCONTR), PSECTBASE, PSECTOFFSET ; 1848
                                          54      0C    A2   D0 00218           MOVL    12(PSCTCONTR), R4                       ; 1849
                    58                    55            54   C1 0021C           ADDL3   R4, PSECTOFFSET, PSECTEND
                                                    51   D4 00220           CLRL    R1                                      ; 1851
                                                    54   D5 00222           TSTL    R4
                                                    04   13 00224           BEQL    40$
                                                    51   D6 00226           INCL    R1
                                                    58   D7 00228           DECL    PSECTEND                                ; 1852
                    09                    00      10    A2   8F 0022A 40$:      CASEB   16(PSCTCONTR), #0, #9                   ; 1854
          0026      0020                001A          0014      0022F 41$:      .WORD   42$-41$,-
          002C      002C                002C          002C      00237           43$-41$,-
                                        0032          002C      0023F           44$-41$,-
                                                                                45$-41$,-
                                                                                46$-41$,-
                                                                                46$-41$,-
                                                                                46$-41$,-
                                                                                46$-41$,-
                                                                                46$-41$,-
                                                                                47$-41$
                                          50    DC    AB   9E 00243 42$:      MOVAB   ALIGNBYTE, R0
                                                1C    11   00247           BRB     48$
                                          50    E2    AB   9E 00249 43$:      MOVAB   ALIGNWORD, R0
                                                16    11   0024D           BRB     48$
                                          50    E8    AB   9E 0024F 44$:      MOVAB   ALIGNLONG, R0
                                                10    11   00253           BRB     48$
                                          50    EE    AB   9E 00255 45$:      MOVAB   ALIGNQUAD, R0
                                                0A    11   00259           BRB     48$
                                          50    F4    AB   9E 0025B 46$:      MOVAB   ALIGN2, R0
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                                 04  11 0025F              BRB     48$                                                    ;
                          50      FA AB 9E 00261 47$:     MOVAB   ALIGNPAGE, R0                                          ;
                    FF70  CA        50 D0 00265 48$:     MOVL    R0, ALIGNMENT                                          ;
                          53      04 A2 D0 0026A         MOVL    4(PSCTCONTR), PSCTOWNER                                ; 1865
                          0B 00000000G 00 E8 0026E       BLBS    LNK$GL_CTLMSK+1, 51$                                   ; 1867
                          03          51 E8 00275        BLBS    R1, 50$                                                ; 1868
                                    00AF 31 00278 49$:     BRW     57$                                                    ;
                F8        14    A3        04 E1 0027B 50$:     BBC     #4, 20(PSCTOWNER), 49$                         ; 1870
                          0F      28    A3 91 00280 51$:     CMPB    40(PSCTOWNER), #15                             ; 1874
                                        27 1A 00284          BGTRU   52$                                                    ;
                          7E      10    A2 9A 00286          MOVZBL  16(PSCTCONTR), -(SP)                           ; 1879
                                FF70    CA DD 0028A          PUSHL   ALIGNMENT                                              ;
                                        54 DD 0028E          PUSHL   R4                                             ; 1878
                                        54 DD 00290          PUSHL   R4                                                     ;
                                0120    8F BB 00292          PUSHR   #^M<R5,R8>                                     ; 1877
                                  28    A3 9F 00296          PUSHAB  40(PSCTOWNER)                                  ; 1876
                                        5B DD 00299          PUSHL   R11                                            ; 1875
                                  F8    AA 9F 0029B          PUSHAB  OUTDES                                                 ;
                                        5A DD 0029E          PUSHL   R10                                                    ;
                                F960    CB 9F 002A0          PUSHAB  CONTRBSTR                                              ;
                00000000G       00        0B FB 002A4          CALLS   #11, SYS$FAO                                   ; 1876
                                          15 11 002AB          BRB     53$                                            ;
                                  28    A3 9F 002AD 52$:     PUSHAB  40(PSCTOWNER)                                  ; 1882
                                        5B DD 002B0          PUSHL   R11                                            ; 1881
                                  F8    AA 9F 002B2          PUSHAB  OUTDES                                                 ;
                                        5A DD 002B5          PUSHL   R10                                                    ;
                                F99C    CB 9F 002B7          PUSHAB  CONTRBST2                                              ;
                00000000G       00        05 FB 002BB          CALLS   #5, SYS$FAO                                    ; 1882
                                57        50 D0 002C2 53$:     MOVL    R0, FAO_ERRCODE                                ;
                                09        57 E8 002C5          BLBS    FAO_ERRCODE, 54$                               ; 1885
                                          57 DD 002C8          PUSHL   FAO_ERRCODE                                    ; 1886
                    F97E  CF              01 FB 002CA          CALLS   #1, FAOFAIL                                    ;
                                          11 11 002CF          BRB     55$                                            ;
                                7E        6A 3C 002D1 54$:     MOVZWL  OUTSIZE, -(SP)                                 ; 1887
                                    FF74  CA 9F 002D4          PUSHAB  OUTLINE                                                ;
                00000000V       EF        02 FB 002D8          CALLS   #2, LNK$MAPOUT                                 ;
                                55        50 E9 002DF          BLBC    R0, 60$                                        ;
                                0F      28  A3 91 002E2 55$:     CMPB    40(PSCTOWNER), #15                             ; 1890
                                            42 1B 002E6          BLEQU   57$                                            ;
                                7E      10  A2 9A 002E8          MOVZBL  16(PSCTCONTR), -(SP)                           ; 1896
                                    FF70    CA DD 002EC          PUSHL   ALIGNMENT                                      ; 1895
                                            54 DD 002F0          PUSHL   R4                                             ;
                                            54 DD 002F2          PUSHL   R4                                             ; 1894
                                    0120    8F BB 002F4          PUSHR   #^M<R5,R8>                                     ;
                                            5B DD 002F8          PUSHL   R11                                            ; 1892
                                      F8    AA 9F 002FA          PUSHAB  OUTDES                                                 ;
                                            5A DD 002FD          PUSHL   R10                                                    ;
                                    F9C4    CB 9F 002FF          PUSHAB  CONTRBST3                                              ;
                00000000G       00        0A FB 00303          CALLS   #10, SYS$FAO                                   ;
                                57        50 D0 0030A          MOVL    R0, FAO_ERRCODE                                ;
                                09        57 E8 0030D          BLBS    FAO_ERRCODE, 56$                               ; 1898
                                          57 DD 00310          PUSHL   FAO_ERRCODE                                    ; 1899
                        F936  CF          01 FB 00312          CALLS   #1, FAOFAIL                                    ;
                                          11 11 00317          BRB     57$                                            ;
                                7E        6A 3C 00319 56$:     MOVZWL  OUTSIZE, -(SP)                                 ; 1900
                                    FF74  CA 9F 0031C          PUSHAB  OUTLINE                                                ;
                00000000V       EF        02 FB 00320          CALLS   #2, LNK$MAPOUT                                 ;
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                                 0D      50  E9 00327          BLBC    R0, 60$                                 ;
                                 52      62  D0 0032A 57$:     MOVL    (PSCTCONTR), PSCTCONTR                  ; 1905
                                       FEDE  31 0032D          BRW     38$                                     ; 1846
                                     78  AA  D4 00330 58$:     CLRL    PSECTNAMELINE                           ; 1908
                                 50      01  D0 00333 59$:     MOVL    #1, R0                                  ; 1910
                                             04 00336          RET                                             ;
                                         50  D4 00337 60$:     CLRL    R0                                      ; 1911
                                             04 00339          RET                                             ;

; Routine Size:  826 bytes,    Routine Base:  $CODE$ + 05AB

;  1358          1912  2
;  1359          1913  2 !
;  1360          1914  2 ! MAIN BODY OF LNK$MAPPSCTS
;  1361          1915  2 !
;  1362          1916  2 ! START ROUTINE OUTPUT.
;  1363          1917  2 !
;  1364          1918  2
;  1365          1919  2 if .lnk$gl_ctlmsk [lnk$v_brief]                  ! MORE THAN A BRIEF MAP?
;  1366          1920  2 then return;                                     ! NO, RETURN
;  1367          1921  2
;  1368          1922  2 subhdline = 0;                                   ! INITIALIZE SUBHEADER ADDR
;  1369          1923  2
;  1370          1924  2 if .lnk$gl_ctlmsk [lnk$v_long]                  ! IF A FULL MAP
;  1371          1925  3 then (if not newpage () then return )           ! OUTPUT NEW PAGE AND HEADER
;  1372          1926  2 else (if not newline () then return );          ! OTHERWISE JUST A NEW LINE
;  1373          1927  2
;  1374          1928  2 if not mapbox (psecthdr)                        ! OUTPUT PSECT HEADER
;  1375          1929  2 then return;
;  1376          1930  2
;  1377          1931  2 if not mapsubhdr (psectsubhdr)                  ! OUTPUT PSECT SUB-HEADER
;  1378          1932  2 then return;
;  1379          1933  2
;  1380          1934  2 lib$traverse_tree (lnk$gl_maplst, print_psect);  ! TRAVERSE TREE TO PRINT PSECTS
;  1381          1935  2 return true
;  1382          1936  2
;  1383          1937  1 end;                                             ! OF LNK$MAPPSCTS


                                           0000 00000          .ENTRY  LNK$MAPPSCTS, Save nothing              ; 1699
                51 00000000G   00                   01  E0 00002          BBS     #1, LNK$GL_CTLMSK+1, 3$         ; 1919
                                     00000000'      EF  D4 0000A          CLRL    SUBHDLINE                       ; 1922
                                  09 00000000G      00  E9 00010          BLBC    LNK$GL_CTLMSK+1, 1$             ; 1924
                   00000000V      EF                00  FB 00017          CALLS   #0, NEWPAGE                     ; 1925
                                                    07  11 0001E          BRB     2$
                   00000000V      EF                00  FB 00020 1$:     CALLS   #0, NEWLINE                     ; 1926
                                  31                50  E9 00027 2$:     BLBC    R0, 3$
                                     00000000'      EF  9F 0002A          PUSHAB  PSECTHDR                        ; 1928
                   00000000V      EF                01  FB 00030          CALLS   #1, MAPBOX
                                  21                50  E9 00037          BLBC    R0, 3$
                                     00000000'      EF  9F 0003A          PUSHAB  PSECTSUBHDR                     ; 1931
                   00000000V      EF                01  FB 00040          CALLS   #1, MAPSUBHDR
                                  11                50  E9 00047          BLBC    R0, 3$                          ;
```

```
                                 FC78   CF  9F 0004A          PUSHAB  PRINT_PSECT                          ; 1934
                         00000000G   00  9F 0004E          PUSHAB  LNK$GL_MAPLST                        :
                 00000000G   00          02  FB 00054          CALLS   #2, LIB$TRAVERSE_TREE            :
                                         04 0005B 3$:       RET                                          ; 1937

; Routine Size:  92 bytes,    Routine Base:  $CODE$ + 08E5

; 1384          1938  1
```

```
;  1386          1939  1 global routine lnk$mapsyms : novalue =          ! ROUTINE TO OUTPUT SYMBOL INFORMATION
;  1387          1940  1
;  1388          1941  1 !++
;  1389          1942  1 ! FUNCTIONAL DESCRIPTION:
;  1390          1943  1 !
;  1391          1944  1 !       THIS ROUTINE OUTPUTS ANY SYNOPSIS OF GLOBAL SYMBOLS REQUESTED BY
;  1392          1945  1 !       THE USER, INCLUDING THE CROSS REFERENCE SUMMARY.  IT THEN CLOSES
;  1393          1946  1 !       THE MAP FILE AND SPOOLS IT (IF SO REQUESTED).
;  1394          1947  1 !
;  1395          1948  1 ! FORMAL PARAMETERS:
;  1396          1949  1 !
;  1397          1950  1 !       NONE
;  1398          1951  1 !
;  1399          1952  1 ! IMPLICIT INPUTS:
;  1400          1953  1 !
;  1401          1954  1 !       ALL GLOBAL SYMBOLS MUST HAVE BEEN PREVIOUSLY RELOCATED AND SENT
;  1402          1955  1 !       TO THE CROSS REFERENCE PROGRAM FOR STORAGE.
;  1403          1956  1 !
;  1404          1957  1 ! IMPLICIT OUTPUTS:
;  1405          1958  1 !
;  1406          1959  1 !       THIS ROUTINE OUTPUTS THE GLOBAL SYMBOL SYNOPSES, BASED ON THE USER
;  1407          1960  1 !       SPECIFIED MAP QUALIFIERS.  THESE INCLUDE THE GLOBAL SYNOPSIS ORDERED
;  1408          1961  1 !       BY NAME AND BY VALUE AND THE CROSS REFERENCE SUMMARY.
;  1409          1962  1 !
;  1410          1963  1 ! ROUTINE VALUE:
;  1411          1964  1 !
;  1412          1965  1 !       NOVALUE
;  1413          1966  1 !
;  1414          1967  1 ! COMPLETION CODES:
;  1415          1968  1 !
;  1416          1969  1 !       NONE
;  1417          1970  1 !
;  1418          1971  1 ! SIDE EFFECTS:
;  1419          1972  1 !
;  1420          1973  1 !       NONE
;  1421          1974  1 !
;  1422          1975  1 !--
;  1423          1976  2     begin
;  1424          1977  2
;  1425          1978  2     local
;  1426          1979  2         crfsubhdr1 : block [len$c_mapline, byte],
;  1427          1980  2         crfsubhdr2 : block [len$c_mapline, byte],
;  1428          1981  2         desc : ref block [, byte],
;  1429          1982  2         errorcode,                              ! LOCAL ERROR CODE
;  1430          1983  2         linespage1,                             ! NUMBER OF LINES ON FIRST PAGE
;  1431          1984  2         string_ptr,                             ! PTR TO SUBHDR FAO STRING
;  1432          1985  2         crefmode;                               ! NUMBER OF SYMBOLS ACROSS PAGE IS DEFINED
;  1433          1986  2
;  1434          1987  2                                                 ! BY THE MODE
;  1435          1988  2 !
;  1436          1989  2     psectnameline = 0;                          ! ENSURE NO PSECT SUMMARY PRINTED
;  1437          1990  2
;  1438          1991  2     if not .lnk$gl_ctlmsk [lnk$v_brief]         ! MORE THAN A BRIEF MAP?
;  1439          1992  2     then
;  1440          1993  3         begin                                   ! YES, THEN PROCEED, ELSE SKIP
;  1441          1994  3         subhdline = 0;                          ! NO SUB HEADER FOR NEW PAGE YET
;  1442          1995  3
```

```
;  1443          1996  3          if .lnk$gl_ctlmsk [lnk$v_long]          ! IF A FULL MAP
;  1444          1997  3          then
;  1445          1998  4              (if not newpage () then return )    ! GIVE UP IF FAIL TO GET NEW PAGE
;  1446          1999  3          else
;  1447          2000  3              (if not newline () then return );   ! OR NEW LINE IF NOT FULL MAP
;  1448          2001  3
;  1449          2002  3          if .lnk$gl_ctlmsk [lnk$v_cros]          ! PICK THE SYMBOL TABLE HEADING
;  1450          2003  3          then
;  1451          2004  4              begin
;  1452          2005  4
;  1453          2006  4              if not mapbox (symbolcref) then return;     ! FOR CROSS REFERENCED OR NOT
;  1454          2007  4
;  1455          2008  4  !
;  1456          2009  4  ! CREATE THE FAO CONTROL STRINGS FOR CREF SUB HEADER
;  1457          2010  4  !
;  1458          2011  4              crfsubhdr [dsc$w_length] = len$c_mapline;
;  1459          2012  4              crfsubhdr [dsc$a_pointer] = crfsubhdr1;
;  1460          2013  4              sys$fao (fao_crefsubhd, crfsubhdr, crfsubhdr, .lnk$gl_maxsymsz + 1, crfsubhd1,
;  1461          2014  4                  .lnk$gl_maxmodsz + 6, crfsubhd2);
;  1462          2015  4              desc = crfsubhdr + dsc$c_s_bln;
;  1463          2016  4              desc [dsc$w_length] = len$c_mapline;
;  1464          2017  4              desc [dsc$a_pointer] = crfsubhdr2;
;  1465          2018  4              sys$fao (fao_crefsubhd, .desc, .desc, .lnk$gl_maxsymsz + 1, crfsubhd3, .lnk$gl_maxmodsz + 6,
;  1466          2019  4                  crfsubhd4);
;  1467          2020  4              sys$fao (fao_crel, fao_symdesc, fao_symdesc, .lnk$gl_maxsymsz);
;  1468          2021  4              sys$fao (fao_crel, fao_modesc, fao_modesc, .lnk$gl_maxmodsz + 1);
;  1469          2022  4              symbolfield [fld$b_maxlng] = .lnk$gl_maxsymsz;
;  1470          2023  4              referencer [fld$b_maxlng] = .lnk$gl_maxmodsz + 1;
;  1471          2024  4              ch$move (dsc$c_s_bln, fao_symdesc, symbolfield [fld$b_faodsc]);
;  1472          2025  4              ch$move (dsc$c_s_bln, fao_modesc, referencer [fld$b_faodsc]);
;  1473          2026  4
;  1474          2027  4              if not mapsubhdr (crfsubhdr) then return;
;  1475          2028  4
;  1476          2029  4              crefmode = crf$k_defs_refs;         ! FULL CROSS REFERENCE
;  1477          2030  4              end
;  1478          2031  3          else
;  1479          2032  4              begin
;  1480          2033  4
;  1481          2034  4              if not mapbox (symbyname) then return;      ! GIVE UP IF FAIL TO OUTPUT THE BOXED HEADING
;  1482          2035  4
;  1483          2036  4              string_ptr = symsubhdr;             ! ASSUME SHORT SYMBOLS
;  1484          2037  4              desc = sym$c_shortname;
;  1485          2038  4
;  1486          2039  4              if .lnk$gl_maxsymsz gtr sym$c_shortname
;  1487          2040  4              then
;  1488          2041  5                  begin
;  1489          2042  5                  string_ptr = symlngsubhdr;
;  1490          2043  5                  desc = sym$c_maxlng;
;  1491          2044  4                  end;
;  1492          2045  4
;  1493          2046  4              sys$fao (fao_crel, fao_symdesc, fao_symdesc, .desc);
;  1494          2047  4              ch$move (dsc$c_s_bln, fao_symdesc, symbolfield [fld$b_faodsc]);
;  1495          2048  4              symbolfield [fld$b_maxlng] = .desc;
;  1496          2049  4
;  1497          2050  4              if not mapsubhdr (.string_ptr) then return;
;  1498          2051  4
;  1499          2052  4              crefmode = crf$k_values;            ! JUST WANT THE KEYS AND VALUES
```

```
;  1500          2053  3          end;
;  1501          2054  3
;  1502          2055  3      linespage1 = .lnk$gb_linespp - .linecnt;        ! SET NUMBER OF LINES ON FIRST PAGE
;  1503          2056  3
;  1504          2057  4      if not (errorcode = crf$out (lnk$al_sytblfmt, len$c_mapline,    ! CALL CRF TO DO THE WORK
;  1505          2058  4              .linespage1, .lnk$gb_linespp - 6, .crefmode, crf$k_save))
;  1506          2059  3      then
;  1507          2060  3          signal (lin$_crferr, 0, .errorcode);
;  1508          2061  3
;  1509          2062  3  !
;  1510          2063  3  !   NOW FOR SYMBOLS BY VALUE IF REQUESTED
;  1511          2064  3  !
;  1512          2065  3      if .lnk$gl_ctlmsk [lnk$v_long]                  ! WANT A LONG MAP?
;  1513          2066  3      then
;  1514          2067  4          begin                                       ! YES, ADD THE VALUE CROSS REFERENCE
;  1515          2068  4          sys$fao (fao_cre1, fao_symdesc, fao_symdesc, .lnk$gl_maxsymsz);
;  1516          2069  4          ch$move (dsc$c_s_bln, fao_symdesc, symbolfield [fld$b_faodsc]);
;  1517          2070  4          symbolfield [fld$b_maxlng] = .lnk$gl_maxsymsz;
;  1518          2071  4          subhdline = 0;                              ! NO SUBHEADING YET
;  1519          2072  4
;  1520          2073  4          if not newpage () then return;              ! GIVE UP IF NO NEW PAGE
;  1521          2074  4
;  1522          2075  4          if not mapbox (symbyvalue) then return;     ! GIVE UP ON FAILURE TO OUTPUT THE BOX HEADING
;  1523          2076  4
;  1524          2077  4          if not mapsubhdr (valsubhdr) then return;   ! OR THE TABLE HEADING
;  1525          2078  4
;  1526          2079  4          linespage1 = .lnk$gb_linespp - .linecnt;    ! SET NUMBER OF LINES ON FIRST PAGE
;  1527          2080  4
;  1528          2081  5          if not (errorcode = crf$out (lnk$al_valctltb,       ! AND CALL CRF TO DO
;  1529          2082  5                  len$c_mapline, .linespage1,         ! ITS THING
;  1530          2083  5                  .lnk$gb_linespp - 3, crf$k_vals_refs,       ! AND SAVE THE TABLE
;  1531          2084  5                  crf$k_save))
;  1532          2085  4          then
;  1533          2086  4              signal (lin$_crferr, 0, .errorcode);
;  1534          2087  4
;  1535          2088  3          end;
;  1536          2089  3
;  1537          2090  3      if .linecnt + 10 gtr .lnk$gb_linespp    ! ENSURE ROOM FOR KEY TO SPECIAL CHARS LINE
;  1538          2091  3      then
;  1539          2092  4          begin
;  1540          2093  4          linecnt = .lnk$gb_linespp;          ! FORCE A NEW PAGE
;  1541          2094  4
;  1542          2095  4          if not lnk$mapout (outline, 0) then return;
;  1543          2096  4
;  1544          2097  3          end;
;  1545          2098  3
;  1546          2099  3      incru i from 1 to 3 do
;  1547          2100  3
;  1548          2101  3          if not lnk$mapout (outline, 0)      ! SKIP 3 LINES
;  1549          2102  3          then
;  1550          2103  3              return;
;  1551          2104  3
;  1552          2105  3      if not lnk$mapout (chardef_str [1], .chardef_str [0]) then return;
;  1553          2106  3
;  1554          2107  4      if not (errorcode = $fao (abbrvtbl1_str, outsize, outdes))
;  1555          2108  3      then
;  1556          2109  3          faofail (.errorcode)
```

```
;  1557          2110  3          else
;  1558          2111  3
;  1559          2112  3              if not lnk$mapout (outline, .outsize) then return;
;  1560          2113  3
;  1561          2114  3          incru i from 0 to 3 do
;  1562          2115  4              begin
;  1563          2116  4
;  1564          2117  5              if not (errorcode = $fao (abbrvtbl2_str, outsize, outdes, .str_pointer [.i]))
;  1565          2118  4              then
;  1566          2119  4                  faofail (.errorcode)
;  1567          2120  4              else
;  1568          2121  4
;  1569          2122  4                  if not lnk$mapout (outline, .outsize) then return;
;  1570          2123  4
;  1571          2124  3              end;
;  1572          2125  3
;  1573          2126  4          if not (errorcode = $fao (abbrvtbl1_str, outsize, outdes))
;  1574          2127  3          then
;  1575          2128  3              faofail (.errorcode)
;  1576          2129  3          else
;  1577          2130  3                                                                                                  ;
;  1578          2131  3              if not lnk$mapout (outline, .outsize) then return;
;  1579          2132  3                                                                                                  ;
;  1580          2133  2          end;
;  1581          2134  2
;  1582          2135  2      return;
;  1583          2136  1      end;


                                    0FFC 00000          .ENTRY  LNK$MAPSYMS, Save R2,R3,R4,R5,R6,R7,R8,R9,-      ; 1939
                                                                R10,R11
                5B 00000000G    00   9E 00002          MOVAB   SYS$FAO, R11                                      ;
                5A 00000000'    EF   9E 00009          MOVAB   LNK$GL_MAXSYMSZ, R10                              ;
                59 00000000'    EF   9E 00010          MOVAB   FAO_CRE1, R9                                      ;
                58 00000000'    EF   9E 00017          MOVAB   FAO_SYMDESC, R8                                   ;
                5E      FEF8    CE   9E 0001E          MOVAB   -264(SP), SP                                      ;
                          28    A8   D4 00023          CLRL    PSECTNAMELINE                                     ; 1989
01 00000000G    00            01   E1 00026          BBC     #1, LNK$GL_CTLMSK+1, 1$                           ; 1991
                              04   0002E              RET                                                       ;
                          E4    A8   D4 0002F  1$:     CLRL    SUBHDLINE                                         ; 1994
                09 00000000G    00   E9 00032          BLBC    LNK$GL_CTLMSK+1, 2$                               ; 1996
    00000000V   EF              00   FB 00039          CALLS   #0, NEWPAGE                                       ; 1998
                              07   11 00040          BRB     3$                                                ;
    00000000V   EF              00   FB 00042  2$:     CALLS   #0, NEWLINE                                       ; 2000
                16              50   E9 00049  3$:     BLBC    R0, 5$                                            ;
                    00000000G   00   95 0004C          TSTB    LNK$GL_CTLMSK                                     ; 2002
                              03   19 00052          BLSS    4$                                                ;
                            00A0   31 00054          BRW     7$                                                ;
                        FD28    C9   9F 00057  4$:     PUSHAB  SYMBOLCREF                                        ; 2006
    00000000V   EF              01   FB 0005B          CALLS   #1, MAPBOX                                        ;
                01              50   E8 00062  5$:     BLBS    R0, 6$                                            ;
                              04   00065              RET                                                       ;
          E8    A8        84    8F   9B 00066  6$:     MOVZBW  #132, CRFSUBHDR                                   ; 2011
          EC    A8      FF7C    CD   9E 0006B          MOVAB   CRFSUBHDR1, CRFSUBHDR+4                           ; 2012
```

```
                                A4   A9  9F 00071          PUSHAB  CRFSUBHD2                                ; 2013
                7E      04      AA   06  C1 00074          ADDL3   #6, LNK$GL_MAXMODSZ, -(SP)              ; 2014
                                FF7C C9  9F 00079          PUSHAB  CRFSUBHD1                               ; 2013
                7E              6A   01  C1 0007D          ADDL3   #1, LNK$GL_MAXSYMSZ, -(SP)
                                E8   A8  9F 00081          PUSHAB  CRFSUBHDR
                                E8   A8  9F 00084          PUSHAB  CRFSUBHDR
                                F0   A9  9F 00087          PUSHAB  FAO_CREFSUBHD
                            6B      07  FB 0008A          CALLS   #7, SYS$FAO
                            56  F0  A8  9E 0008D          MOVAB   CRFSUBHDR+8, DESC                       ; 2015
                            66  84  8F  9B 00091          MOVZBW  #132, (DESC)                            ; 2016
                        04  A6      6E  9E 00095          MOVAB   CRFSUBHDR2, 4(DESC)                     ; 2017
                                D8   A9  9F 00099          PUSHAB  CRFSUBHD4                               ; 2018
                7E      04      AA   06  C1 0009C          ADDL3   #6, LNK$GL_MAXMODSZ, -(SP)
                                C0   A9  9F 000A1          PUSHAB  CRFSUBHD3
                7E              6A   01  C1 000A4          ADDL3   #1, LNK$GL_MAXSYMSZ, -(SP)
                                     56  DD 000A8          PUSHL   DESC
                                     56  DD 000AA          PUSHL   DESC
                                F0   A9  9F 000AC          PUSHAB  FAO_CREFSUBHD
                            6B      07  FB 000AF          CALLS   #7, SYS$FAO
                                     6A  DD 000B2          PUSHL   LNK$GL_MAXSYMSZ                         ; 2020
                                     58  DD 000B4          PUSHL   R8
                                     58  DD 000B6          PUSHL   R8
                                     59  DD 000B8          PUSHL   R9
                            6B      04  FB 000BA          CALLS   #4, SYS$FAO
                7E      04      AA   01  C1 000BD          ADDL3   #1, LNK$GL_MAXMODSZ, -(SP)              ; 2021
                                10   A8  9F 000C2          PUSHAB  FAO_MODESC
                                10   A8  9F 000C5          PUSHAB  FAO_MODESC
                                     59  DD 000C8          PUSHL   R9
                            6B      04  FB 000CA          CALLS   #4, SYS$FAO
                        7F      A8      6A  90 000CD          MOVB    LNK$GL_MAXSYMSZ, SYMBOLFIELD+3          ; 2022
0123    C8      04      AA              01  81 000D1          ADDB3   #1, LNK$GL_MAXMODSZ, REFERENCER+3       ; 2023
0080    C8              68              08  28 000D8          MOVC3   #8, FAO_SYMDESC, SYMBOLFIELD+4          ; 2024
0124    C8      10      A8              08  28 000DE          MOVC3   #8, FAO_MODESC, REFERENCER+4            ; 2025
                                E8   A8  9F 000E5          PUSHAB  CRFSUBHDR                               ; 2027
            00000000V   EF              01  FB 000E8          CALLS   #1, MAPSUBHDR
                            46          50  E9 000EF          BLBC    R0, 9$
                            50          02  D0 000F2          MOVL    #2, CREFMODE                        ; 2029
                                        46  11 000F5          BRB     10$                                 ; 2002
                                FD14    C9  9F 000F7 7$:      PUSHAB  SYMBYNAME                           ; 2034
            00000000V   EF              01  FB 000FB          CALLS   #1, MAPBOX
                            33          50  E9 00102          BLBC    R0, 9$
                            57  00AC    C9  9E 00105          MOVAB   SYMSUBHDR, STRING_PTR               ; 2036
                            56          0F  D0 0010A          MOVL    #15, DESC                           ; 2037
                            0F          6A  D1 0010D          CMPL    LNK$GL_MAXSYMSZ, #15                ; 2039
                                        08  15 00110          BLEQ    8$
                            57  0140    C9  9E 00112          MOVAB   SYMLNGSUBHDR, STRING_PTR            ; 2042
                            56          1F  D0 00117          MOVL    #31, DESC                           ; 2043
                                        56  DD 0011A 8$:      PUSHL   DESC                                ; 2046
                                        58  DD 0011C          PUSHL   R8
                                        58  DD 0011E          PUSHL   R8
                                        59  DD 00120          PUSHL   R9
                                    6B      04  FB 00122          CALLS   #4, SYS$FAO
0080    C8                          68      08  28 00125          MOVC3   #8, FAO_SYMDESC, SYMBOLFIELD+4      ; 2047
                                7F  A8      56  90 0012B          MOVB    DESC, SYMBOLFIELD+3                 ; 2048
                                            57  DD 0012F          PUSHL   STRING_PTR                          ; 2050
                            00000000V   EF      01  FB 00131          CALLS   #1, MAPSUBHDR
                                        7E      50  E9 00138 9$:      BLBC    R0, 12$
```

```
                                                50 D4 0013B          CLRL    CREFMODE                                        ; 2052
                                             56 FC AA 9A 0013D 10$:  MOVZBL  LNK$GB_LINESPP, LINESPAGE1                      ; 2055
                                             56 DC A8 C2 00141       SUBL2   LINECNT, LINESPAGE1
                                                01 DD 00145          PUSHL   #1                                              ; 2057
                                                50 DD 00147          PUSHL   CREFMODE                                        ; 2058
                                             7E FC AA 9A 00149       MOVZBL  LNK$GB_LINESPP, -(SP)
                                             6E    06 C2 0014D       SUBL2   #6, (SP)
                                                56 DD 00150          PUSHL   LINESPAGE1
                                             7E 84 8F 9A 00152       MOVZBL  #132, -(SP)                                     ; 2057
                                                08 AA 9F 00156       PUSHAB  LNK$AL_SYTBLFMT
                                00000000G    00    06 FB 00159       CALLS   #6, CRF$OUT
                                             57    50 D0 00160       MOVL    R0, ERRORCODE
                                             11    57 E8 00163       BLBS    ERRORCODE, 11$
                                                57 DD 00166          PUSHL   ERRORCODE                                       ; 2060
                                                7E D4 00168          CLRL    -(SP)
                                          00000000G 8F DD 0016A      PUSHL   #LIN$_CRFERR
                                00000000G    00    03 FB 00170       CALLS   #3, LIB$SIGNAL
                                             78 00000000G 00 E9 00177 11$:  BLBC    LNK$GL_CTLMSK+1, 13$                    ; 2065
                                                6A DD 0017E          PUSHL   LNK$GL_MAXSYMSZ                                 ; 2068
                                                58 DD 00180          PUSHL   R8
                                                58 DD 00182          PUSHL   R8
                                                59 DD 00184          PUSHL   R9
                                             6B    04 FB 00186       CALLS   #4, SYS$FAO
                                0080 C8      68    08 28 00189       MOVC3   #8, FAO_SYMDESC, SYMBOLFIELD+4                  ; 2069
                                          7F AB    6A 90 0018F       MOVB    LNK$GL_MAXSYMSZ, SYMBOLFIELD+3                  ; 2070
                                                E4 AB D4 00193       CLRL    SUBHDLINE                                       ; 2071
                                00000000V    EF    00 FB 00196       CALLS   #0, NEWPAGE                                     ; 2073
                                             75    50 E9 0019D       BLBC    R0, 14$
                                                FD43 C9 9F 001A0     PUSHAB  SYMBYVALUE                                      ; 2075
                                00000000V    EF    01 FB 001A4       CALLS   #1, MAPBOX
                                             7A    50 E9 001AB       BLBC    R0, 17$
                                                0178 C9 9F 001AE     PUSHAB  VALSUBHDR                                       ; 2077
                                00000000V    EF    01 FB 001B2       CALLS   #1, MAPSUBHDR
                                             6C    50 E9 001B9 12$:  BLBC    R0, 17$
                                             56 FC AA 9A 001BC       MOVZBL  LNK$GB_LINESPP, LINESPAGE1                      ; 2079
                                             56 DC A8 C2 001C0       SUBL2   LINECNT, LINESPAGE1
                                                01 DD 001C4          PUSHL   #1                                              ; 2081
                                                01 DD 001C6          PUSHL   #1
                                             7E FC AA 9A 001C8       MOVZBL  LNK$GB_LINESPP, -(SP)                           ; 2083
                                             6E    03 C2 001CC       SUBL2   #3, (SP)
                                                56 DD 001CF          PUSHL   LINESPAGE1                                      ; 2082
                                             7E 84 8F 9A 001D1       MOVZBL  #132, -(SP)                                     ; 2081
                                                68 AA 9F 001D5       PUSHAB  LNK$AL_VALCTLTB
                                00000000G    00    06 FB 001D8       CALLS   #6, CRF$OUT
                                             57    50 D0 001DF       MOVL    R0, ERRORCODE
                                             11    57 E8 001E2       BLBS    ERRORCODE, 13$
                                                57 DD 001E5          PUSHL   ERRORCODE                                       ; 2086
                                                7E D4 001E7          CLRL    -(SP)
                                          00000000G 8F DD 001E9      PUSHL   #LIN$_CRFERR
                                00000000G    00    03 FB 001EF       CALLS   #3, LIB$SIGNAL
                                   50        DC A8 0A C1 001F6 13$:  ADDL3   #10, LINECNT, R0                               ; 2090
                50 FC AA                        08 00 ED 001FB       CMPZV   #0, #8, LNK$GB_LINESPP, R0
                                                   15 18 00201       BGEQ    15$
                                   DC A8 FC AA 9A 00203              MOVZBL  LNK$GB_LINESPP, LINECNT                         ; 2093
                                                   7E D4 00208       CLRL    -(SP)                                           ; 2095
                                                FF24 C8 9F 0020A     PUSHAB  OUTLINE
                                00000000V    EF    02 FB 0020E       CALLS   #2, LNK$MAPOUT
```

```
                58              50  E9 00215 14$:    BLBC    R0, 19$                                 ;
                52              01  D0 00218 15$:    MOVL    #1, I                                   ; 2099
                                7E  D4 0021B 16$:    CLRL    -(SP)                                   ; 2101
                          FF24  C8  9F 0021D         PUSHAB  OUTLINE                                 ;
00000000V       EF              02  FB 00221         CALLS   #2, LNK$MAPOUT                          ;
                7A              50  E9 00228 17$:    BLBC    R0, 23$                                 ;
                                52  D6 0022B         INCL    I                                       ;
                03              52  D1 0022D         CMPL    I, #3                                   ;
                                E9  1B 00230         BLEQU   16$                                     ;
                7E        FBD1  C9  9A 00232         MOVZBL  CHARDEF_STR, -(SP)                      ; 2105
                          FBD2  C9  9F 00237         PUSHAB  CHARDEF_STR+1                           ;
00000000V       EF              02  FB 0023B         CALLS   #2, LNK$MAPOUT                          ;
                60              50  E9 00242         BLBC    R0, 23$                                 ;
                            A8  A8  9F 00245         PUSHAB  OUTDES                                  ; 2107
                            B0  A8  9F 00248         PUSHAB  OUTSIZE                                 ;
                          F58C  C9  9F 0024B         PUSHAB  ABBRVTBL1_STR                           ;
                6B              03  FB 0024F         CALLS   #3, SYS$FAO                             ;
                57              50  D0 00252         MOVL    R0, ERRORCODE                           ;
                09              57  E8 00255         BLBS    ERRORCODE, 18$                          ;
                                57  DD 00258         PUSHL   ERRORCODE                               ; 2109
              F658  CF          01  FB 0025A         CALLS   #1, FAOFAIL                             ;
                                12  11 0025F         BRB     20$                                     ;
                7E        B0    A8  3C 00261 18$:    MOVZWL  OUTSIZE, -(SP)                          ; 2112
                          FF24  C8  9F 00265         PUSHAB  OUTLINE                                 ;
00000000V       EF              02  FB 00269         CALLS   #2, LNK$MAPOUT                          ;
                66              50  E9 00270 19$:    BLBC    R0, 26$                                 ;
                                52  D4 00273 20$:    CLRL    I                                       ; 2114
                          FC68  C942  DD 00275 21$:    PUSHL   STR_POINTER[I]                       ; 2117
                            A8  A8  9F 0027A         PUSHAB  OUTDES                                  ;
                            B0  A8  9F 0027D         PUSHAB  OUTSIZE                                 ;
                          F5A0  C9  9F 00280         PUSHAB  ABBRVTBL2_STR                           ;
                6B              04  FB 00284         CALLS   #4, SYS$FAO                             ;
                57              50  D0 00287         MOVL    R0, ERRORCODE                           ;
                09              57  E8 0028A         BLBS    ERRORCODE, 22$                          ;
                                57  DD 0028D         PUSHL   ERRORCODE                               ; 2119
              F623  CF          01  FB 0028F         CALLS   #1, FAOFAIL                             ;
                                12  11 00294         BRB     24$                                     ;
                7E        B0    A8  3C 00296 22$:    MOVZWL  OUTSIZE, -(SP)                          ; 2122
                          FF24  C8  9F 0029A         PUSHAB  OUTLINE                                 ;
00000000V       EF              02  FB 0029E         CALLS   #2, LNK$MAPOUT                          ;
                31              50  E9 002A5 23$:    BLBC    R0, 26$                                 ;
                                52  D6 002A8 24$:    INCL    I                                       ; 2114
                03              52  D1 002AA         CMPL    I, #3                                   ;
                                C6  1B 002AD         BLEQU   21$                                     ;
                            A8  A8  9F 002AF         PUSHAB  OUTDES                                  ; 2126
                            B0  A8  9F 002B2         PUSHAB  OUTSIZE                                 ;
                          F58C  C9  9F 002B5         PUSHAB  ABBRVTBL1_STR                           ;
                6B              03  FB 002B9         CALLS   #3, SYS$FAO                             ;
                57              50  D0 002BC         MOVL    R0, ERRORCODE                           ;
                08              57  E8 002BF         BLBS    ERRORCODE, 25$                          ;
                                57  DD 002C2         PUSHL   ERRORCODE                               ; 2128
              F5EE  CF          01  FB 002C4         CALLS   #1, FAOFAIL                             ;
                                04  002C9         RET                                             ;
                7E        B0    A8  3C 002CA 25$:    MOVZWL  OUTSIZE, -(SP)                          ; 2131
                          FF24  C8  9F 002CE         PUSHAB  OUTLINE                                 ;
00000000V       EF              02  FB 002D2         CALLS   #2, LNK$MAPOUT                          ;
                                04  002D9 26$:    RET                                             ; 2136
```

; Routine Size: 730 bytes,   Routine Base: $CODE$ + 0941

; 1584   2137 1

```
;  1586          2138  1 global routine lnk$mapiscts : novalue =          ! ROUTINE TO OUTPUT IMAGE SECTION INFORMATION
;  1587          2139  2     begin
;  1588          2140  2
;  1589          2141  2 !++
;  1590          2142  2 ! FUNCTIONAL DESCRIPTION:
;  1591          2143  2 !
;  1592          2144  2 !       THIS ROUTINE OUTPUTS THE IMAGE SECTION SYNOPSIS.
;  1593          2145  2 !
;  1594          2146  2 ! FORMAL PARAMETERS:
;  1595          2147  2 !
;  1596          2148  2 !       NONE
;  1597          2149  2 !
;  1598          2150  2 ! IMPLICIT INPUTS:
;  1599          2151  2 !
;  1600          2152  2 !       THE IMAGE SECTION DESCRIPTOR LIST - HEAD IS LNK$GL_ISDLST
;  1601          2153  2 !       AND THE IMAGE FILE DESCRIPTOR BLOCK.
;  1602          2154  2 !
;  1603          2155  2 ! IMPLICIT OUTPUTS:
;  1604          2156  2 !
;  1605          2157  2 !       THIS ROUTINE OUTPUTS THE IMAGE SECTION SYNOPSIS.
;  1606          2158  2 !
;  1607          2159  2 ! ROUTINE VALUE:
;  1608          2160  2 !
;  1609          2161  2 !       NOVALUE
;  1610          2162  2 !
;  1611          2163  2 ! COMPLETION CODES:
;  1612          2164  2 !
;  1613          2165  2 !       NONE
;  1614          2166  2 !
;  1615          2167  2 ! SIDE EFFECTS:
;  1616          2168  2 !
;  1617          2169  2 !       NONE
;  1618          2170  2 !
;  1619          2171  2 !--
;  1620          2172  2     local
;  1621          2173  2         fao_errcode,                        ! FAO ERROR CODE
;  1622          2174  2         match_str,                          ! POINTER TO MATCH CONTROL STRING
;  1623          2175  2         fao_ctl_str,                        ! POINTER TO FAO CONTROL STRING
;  1624          2176  2         nextisd : ref block [, byte],       ! ISECT DESCRIPTOR BLOCK
;  1625          2177  2         cluster : ref vector [, byte],      ! ADDRESS OF CLUSTER NAME STRING
;  1626          2178  2         proprefix,                          ! ADDRESS OF "P-" OR BLANKS
;  1627          2179  2         relsfx,                             ! ADDRESS OF "-R" OR BLANKS
;  1628          2180  2         diskvbn,                            ! DISK VBN OF ISECTION
;  1629          2181  2         protect,                            ! ADDRESS OF PROTECTION STRING
;  1630          2182  2         otheratribs1,                       ! FOR ADDITIONAL ATTRIBUTES
;  1631          2183  2         otheratribs2,
;  1632          2184  2         baseva;                             ! BASE VIRTUAL PAGE NUMBER
;  1633          2185  2
;  1634          2186  2 !
;  1635          2187  2
;  1636          2188  2     bind
;  1637          2189  2         imgauxfnb = lnk$gl_imgfil [fdb$t_auxfnb]        ! REFERENCE THE IMAGE FILE'S AUXILIARY
;  1638          2190  2         : block [nam$c_bln, byte];                   ! FILENAME BLOCK
;  1639          2191  2
;  1640          2192  2 !
;  1641          2193  2 ! RE-SET UP THE DESCRIPTOR OF THE IMAGE FILE (IF ANY), BECAUSE
;  1642          2194  2 !       IT IS PROBABLY CREATED NOW.
```

```
;  1643          2195  2 !
;  1644          2196  2
;  1645          2197  2     if .lnk$gl_imgfil neq 0                          ! PROVIDED AN IMAGE WAS SPECIFIED
;  1646          2198  2         and .lnk$gl_ctlmsk [lnk$v_image]             ! AND SUCCESSFULLY CREATED
;  1647          2199  2     then
;  1648          2200  3         begin
;  1649          2201  3         imagefilename [0] = .imgauxfnb [nam$b_rsl];      ! SET LENGTH OF RESULTANT FILE NAME
;  1650          2202  3         imagefilename [1] = .imgauxfnb [nam$l_rsa];      ! AND POINTER TO IT
;  1651          2203  2         end;
;  1652          2204  2
;  1653          2205  2     if not .lnk$gl_ctlmsk [lnk$v_long]               ! IF A LONG MAP
;  1654          2206  2         or .lnk$gw_nisects eql 0                     ! AND SOME IMAGE SECTIONS
;  1655          2207  2     then
;  1656          2208  2         return;                                      ! NO, RETURN
;  1657          2209  2
;  1658          2210  2     subhdline = 0;                                   ! RESET HEADER LINE
;  1659          2211  2
;  1660          2212  2     if not newpage ()                                ! GIVE UP IF FAIL TO GET NEW PAGE
;  1661          2213  2     then
;  1662          2214  2         return;
;  1663          2215  2
;  1664          2216  2     if not mapbox (imagesections)                    ! AND IF THE BOX HEADING FAILS
;  1665          2217  2     then
;  1666          2218  2         return;
;  1667          2219  2
;  1668          2220  2     if not mapsubhdr (isdsubhdr, isdtxt)             ! DITTO FOR ISECTIION SUBHEADER
;  1669          2221  2     then
;  1670          2222  2         return;
;  1671          2223  2
;  1672          2224  2     lnk$gl_curclu = lnk$gl_clulst;                   ! START AT TOP OF CLUSTER LIST
;  1673          2225  2
;  1674          2226  2     while (lnk$gl_curclu = .lnk$gl_curclu [clu$l_nxtclu]) neq 0 ! GET NEXT CLUSTER DESCRIPTOR
;  1675          2227  2     do
;  1676          2228  3         begin
;  1677          2229  3
;  1678          2230  3         if not newline ()                            ! OUTPUT A BLANK LINE
;  1679          2231  3         then
;  1680          2232  3             return;
;  1681          2233  3
;  1682          2234  3         if not .lnk$gl_curclu [clu$v_based]          ! IF CLUSTER IS NOT BASED
;  1683          2235  4             and (.lnk$gl_curclu [clu$v_shrimg]       !  AND IS FROM A SHAREABLE IMAGE
;  1684          2236  4             or .lnk$gl_ctlmsk [lnk$v_shr])           !  OR WE ARE CREATING A SHAREABLE IMAGE
;  1685          2237  3         then
;  1686          2238  3             relsfx = hyphen_r                        ! THEN FLAG THAT IN MAP
;  1687          2239  3         else
;  1688          2240  3             relsfx = blanks;                         ! OTHERWISE USE BLANKS
;  1689          2241  3
;  1690          2242  3         cluster = lnk$gl_curclu [clu$b_namlng]; ! SET ITS NAME POINTER
;  1691          2243  3         nextisd = lnk$gl_curclu [clu$l_fstisd]; ! GO DOWN LIST OF DESCRIPTORS
;  1692          2244  3
;  1693          2245  3         while (nextisd = .nextisd [isl$l_nxtisd]) neq 0 ! TILL ZERO TERMINATED END
;  1694          2246  3         do
;  1695          2247  4             begin
;  1696          2248  4
;  1697          2249  4             bind
;  1698          2250  4                 isectdesc = nextisd [isl$t_hdrisd] : block [, byte];    ! POINT TO THE HEADER PART
;  1699          2251  4
```

```
;1700     2252  4          if .isectdesc [isd$w_pagcnt] neq 0  ! IF NON-NULL ISECT
;1701     2253  4              or .isectdesc [isd$b_type] eql isd$k_usrstack   !  OR THE STACK ISECT
;1702     2254  4          then
;1703     2255  5              begin
;1704     2256  5              fao_ctl_str = ch$ptr (isect_cntrl_str, 0);      ! ASSUME ISECT IS NOT GLOBAL
;1705     2257  5              baseva = .isectdesc [isd$v_vpg]^9;      ! GET BASE VIRTUAL ADDRESS
;1706     2258  5              proprefix = blanks;                 ! ASSUME ISECT NOT PROTECTED
;1707     2259  5
;1708     2260  5              if .isectdesc [isd$v_protect]   ! IF IT IS PROTECTED
;1709     2261  5              then
;1710     2262  5                  proprefix = p_hyphen;       !  THEN TELL THAT
;1711     2263  5
;1712     2264  5              if .isectdesc [isd$v_dzro]      ! IF A DEMAND ZERO IMAGE SECTION
;1713     2265  5              then
;1714     2266  6                  begin                       ! THERE IS NO DISK SPACE ALLOCATED
;1715     2267  6                  diskvbn = 0;                ! SO ZERO THE VBN
;1716     2268  6                  otheratribs1 = demandzero;  ! AND SET THE DESCRIPTIONSTRING
;1717     2269  6                  end
;1718     2270  5              else
;1719     2271  6                  begin
;1720     2272  6                  diskvbn = .isectdesc [isd$l_vbn];   ! GET BASE VBN ON DISK
;1721     2273  6                  otheratribs1 = blanks;
;1722     2274  5                  end;
;1723     2275  5
;1724     2276  5              if .isectdesc [isd$v_wrt]       ! IF THE SECTION IS WRITABLE
;1725     2277  5              then
;1726     2278  5                  protect = readwrite         ! THEN SAY SO
;1727     2279  5              else
;1728     2280  5                  protect = readonly;         ! OTHERWISE TELL THEM READ ONLY
;1729     2281  5
;1730     2282  5              if .nextisd eql .lnk$gl_fixisd  !  IF IT'S THE FIXUP SECTION
;1731     2283  6                  or (.nextisd eql .lnk$gl_curclu [clu$l_fixisd])
;1732     2284  6                                              !  OR THE FIXUP SECTION IN ANOTHER IMAGE
;1733     2285  5              then
;1734     2286  5                  otheratribs2 = fixupsection
;1735     2287  5              else
;1736     2288  5
;1737     2289  5                  if .isectdesc [isd$v_crf]   ! IF COPY ON REFERENCE
;1738     2290  5                  then
;1739     2291  6                      otheratribs2 = (if not .nextisd [isl$v_reprot]  ! THEN SAY COPY ON REF
;1740     2292  6                      then copyonref else addrdata)   ! UNLESS IT HAS .ADDRESS DATA IN IT
;1741     2293  5                  else
;1742     2294  5                      otheratribs2 = blanks;  ! ELSE SAY NOTHING
;1743     2295  5
;1744     2296  5              if .isectdesc [isd$v_gbl]
;1745     2297  5              then
;1746     2298  6                  begin
;1747     2299  6                  fao_ctl_str = ch$ptr (gblis_cntrl_str, 0);  ! USE GLOBAL ISECT FAO CONTROL STRING
;1748     2300  7                  match_str = (selectone .isectdesc [isd$v_matchctl] of
;1749     2301  7                      set
;1750     2302  7                      [isd$k_matall] : alltime;       ! SELECT MATCH = ALWAYS
;1751     2303  7                      [isd$k_matnev] : never; ! SELECT MATCH = NEVER
;1752     2304  7                      [isd$k_matequ] : equal; ! SELECT MATCH = EQUAL
;1753     2305  7                      [isd$k_matleq] : lssequal;      ! SELECT MATCH = LESS/EQUAL
;1754     2306  7                      [otherwise] : blanks;   ! NO MATCH SET
;1755     2307  6                      tes);
;1756     2308  5                  end;
```

```
;  1757          2309  5
;  1758          2310  6              begin
;  1759          2311  6
;  1760          2312  6              bind
;  1761          2313  6                  gsmajid = .(isectdesc [isd$l_ident])<24, 8, 0>,      ! GLOB SEC MAJOR ID
;  1762          2314  6                  gsminid = .(isectdesc [isd$l_ident])<0, 24, 0>;      ! GLOB SEC MINOR ID
;  1763          2315  6
;  1764          2316  6              if .cluster [0] gtru 16          ! IF CLUSTER NAME IS LONG
;  1765          2317  6              then
;  1766          2318  7                  begin
;  1767          2319  7
;  1768          2320  8                  if not (fao_errcode = sys$fao (objmd_cntrl_st1,      ! PUT CLUSTER NAME ON SEPARATE LINE
;  1769          2321  8                        outsize, outdes, .cluster))
;  1770          2322  7                  then
;  1771          2323  7                      faofail (.fao_errcode)
;  1772          2324  7                  else
;  1773          2325  7
;  1774          2326  7                      if not lnk$mapout (outline, .outsize) then return;
;  1775          2327  7
;  1776          2328  7                  cluster = blanks;            ! THEN SET CLUSTER NAME TO BLANKS
;  1777          2329  6                  end;
;  1778          2330  6
;  1779          2331  7              if not (fao_errcode = sys$fao (.fao_ctl_str, outsize, outdes, .cluster,
;  1780          2332  7                                             ! GO FORMAT THE LINE
;  1781          2333  7                      .isectdesc [isd$b_type], .isectdesc [isd$w_pagcnt], .proprefix, .baseva, .relsfx,
;  1782          2334  7                      .diskvbn, .isectdesc [isd$b_pfc], .protect, .otheratribs1, .otheratribs2,
;  1783          2335  7                      isectdesc [isd$t_gblnam], .match_str, gsmajid, gsminid))
;  1784          2336  6              then
;  1785          2337  6                  faofail (.fao_errcode)       ! AND REPORT ANY ERROR
;  1786          2338  6              else
;  1787          2339  6
;  1788          2340  6                  if not lnk$mapout (outline, .outsize)        ! OUTPUT THE LINE
;  1789          2341  6                  then
;  1790          2342  6                      return;                  ! AND GIVE UP ON FAILURE
;  1791          2343  6
;  1792          2344  5                  end;
;  1793          2345  5                  cluster = blanks;            ! SET CLUSTER NAME TO BLANKS FOR REST OF ISECTS
;  1794          2346  4                  end;
;  1795          2347  3              end;
;  1796          2348  2          end;
;  1797          2349  2 !
;  1798          2350  2 ! PRINT KEY TO SPECIAL CHARACTERS
;  1799          2351  2 !
;  1800          2352  2
;  1801          2353  2      if .linecnt + 8 gtr .lnk$gb_linespp          ! ENSURE ROOM FOR KEY TO SPECIAL CHARS LINE
;  1802          2354  2      then
;  1803          2355  3          begin
;  1804          2356  3          linecnt = .lnk$gb_linespp;               ! FORCE A NEW PAGE
;  1805          2357  3
;  1806          2358  3          if not lnk$mapout (outline, 0) then return;
;  1807          2359  3
;  1808          2360  2          end;
;  1809          2361  2
;  1810          2362  2      incru i from 1 to 3 do
;  1811          2363  2
;  1812          2364  2          if not lnk$mapout (outline, 0)           ! SKIP 3 LINES
;  1813          2365  2          then
```

```
;  1814          2366  2              return;
;  1815          2367  2
;  1816          2368  2      if not lnk$mapout (chardef_str [1], .chardef_str [0]) then return;
;  1817          2369  2
;  1818          2370  3      if not (fao_errcode = $fao (abbrvtbl1_str, outsize, outdes))
;  1819          2371  2      then
;  1820          2372  2          faofail (.fao_errcode)
;  1821          2373  2      else
;  1822          2374  2
;  1823          2375  2          if not lnk$mapout (outline, .outsize) then return;
;  1824          2376  2
;  1825          2377  2      incru i from 0 to 1 do
;  1826          2378  3          begin
;  1827          2379  3
;  1828          2380  4          if not (fao_errcode = $fao (abbrvtbl2_str, outsize, outdes, .istr_pointer [.i]))
;  1829          2381  3          then
;  1830          2382  3              faofail (.fao_errcode)
;  1831          2383  3          else
;  1832          2384  3
;  1833          2385  3              if not lnk$mapout (outline, .outsize) then return;
;  1834          2386  3
;  1835          2387  2          end;
;  1836          2388  2
;  1837          2389  3      if not (fao_errcode = $fao (abbrvtbl1_str, outsize, outdes))
;  1838          2390  2      then
;  1839          2391  2          faofail (.fao_errcode)
;  1840          2392  2      else
;  1841          2393  2
;  1842          2394  2          if not lnk$mapout (outline, .outsize) then return;
;  1843          2395  2
;  1844          2396  2      return;                                  ! AND ALL DONE
;  1845          2397  1      end;


                                        0FFC 00000          .ENTRY  LNK$MAPISCTS, Save R2,R3,R4,R5,R6,R7,R8,R9,-; 2138
                                                                    R10,R11
                                    5E  0C  C2 00002        SUBL2   #12, SP
                                    51 00000000G  00  D0 00005      MOVL    LNK$GL_IMGFIL, R1                       ; 2189
                                    50       26   A1  9E 0000C      MOVAB   38(R1), R0
                                                  51  D5 00010      TSTL    R1                                      ; 2197
                                                  17  13 00012      BEQL    1$
                                    10 00000000G  00  E9 00014      BLBC    LNK$GL_CTLMSK, 1$                       ; 2198
00000000'                           EF       03   A0  9A 0001B      MOVZBL  3(R0), IMAGEFILENAME                    ; 2201
00000000'                           EF       04   A0  D0 00023      MOVL    4(R0), IMAGEFILENAME+4                  ; 2202
                                    01 00000000G  00  E8 0002B 1$:  BLBS    LNK$GL_CTLMSK+1, 2$                     ; 2205
                                                  04  00032        RET
                                       00000000G  00  B5 00033 2$:  TSTW    LNK$GW_NISECTS                          ; 2206
                                                  01  12 00039      BNEQ    3$
                                                  04  0003B        RET
                                       00000000'  EF  D4 0003C 3$:  CLRL    SUBHDLINE                               ; 2210
00000000V                           EF             00  FB 00042    CALLS   #0, NEWPAGE                             ; 2212
                                    4B             50  E9 00049    BLBC    R0, 6$
                                       00000000'  EF  9F 0004C      PUSHAB  IMAGESECTIONS                           ; 2216
00000000V                           EF             01  FB 00052    CALLS   #1, MAPBOX
```

```
                                    3B            50  E9 00059          BLBC    R0, 6$                                          ;
                                       00000000'  EF  9F 0005C          PUSHAB  ISDTXT                                          ; 2220
                                       00000000'  EF  9F 00062          PUSHAB  ISDSUBHDR                                       ;
                              00000000V EF            02  FB 00068          CALLS   #2, MAPSUBHDR                           ;
                                        25            50  E9 0006F          BLBC    R0, 6$                                  ;
                              00000000G 00 00000000G  00  9E 00072          MOVAB   LNK$GL_CLULST, LNK$GL_CURCLU            ; 2224
                                        50 00000000G  00  D0 0007D 4$:       MOVL    LNK$GL_CURCLU, R0                       ; 2226
                              00000000G 00            60  D0 00084          MOVL    (R0), LNK$GL_CURCLU                     ;
                                                      03  12 00088          BNEQ    5$                                      ;
                                                  01F8  31 0008D          BRW     34$                                     ;
                              00000000V EF            00  FB 00090 5$:     CALLS   #0, NEWLINE                             ; 2230
                                        01            50  E8 00097 6$:     BLBS    R0, 7$                                  ;
                                                      04  0009A          RET                                             ;
                                        50 00000000G  00  D0 0009B 7$:     MOVL    LNK$GL_CURCLU, R0                       ; 2234
                                        16      58    A0  E8 000A2          BLBS    88(R0), 9$                              ;
                                 08        58   A0        02  E0 000A6          BBS     #2, 88(R0), 8$                          ; 2235
                                 09 00000000G   00        02  E1 000AB          BBC     #2, LNK$GL_CTLMSK, 9$                   ; 2236
                                        5B 00000000'  EF  9E 000B3 8$:       MOVAB   HYPHEN_R, RELSFX                        ; 2238
                                                      07  11 000BA          BRB     10$                                     ;
                                        5B 00000000'  EF  9E 000BC 9$:       MOVAB   BLANKS, RELSFX                          ; 2240
                                        54      5C    A0  9E 000C3 10$:      MOVAB   92(R0), CLUSTER                         ; 2242
                                        53      18    A0  9E 000C7          MOVAB   24(R0), NEXTISD                         ; 2243
                                        53            63  D0 000CB 11$:      MOVL    (NEXTISD), NEXTISD                      ; 2245
                                                      AD  13 000CE          BEQL    4$                                      ;
                                        52      18    A3  9E 000D0          MOVAB   24(NEXTISD), R2                         ; 2250
                                                02    A2  B5 000D4          TSTW    2(R2)                                   ; 2252
                                                      07  12 000D7          BNEQ    12$                                     ;
                                    FD  8F      0B    A2  91 000D9          CMPB    11(R2), #253                            ; 2253
                                                      EB  12 000DE          BNEQ    11$                                     ;
                                        04    AE 00000000'  EF  9E 000E0 12$:      MOVAB   ISECT_CNTRL_STR, FAO_CTL_STR    ; 2256
                                50      04    A2        17  00  EF 000E8          EXTZV   #0, #23, 4(R2), R0                      ; 2257
                                        08    AE        50  09  78 000EE          ASHL    #9, R0, BASEVA                          ;
                                              6E 00000000'  EF  9E 000F3          MOVAB   BLANKS, PROPREFIX                       ; 2258
                                              51      08    A2  9E 000FA          MOVAB   8(R2), R1                               ; 2260
                                        07                  61  12  E1 000FE          BBC     #18, (R1), 13$                          ;
                                              6E 00000000'  EF  9E 00102          MOVAB   P_HYPHEN, PROPREFIX                     ; 2262
                                        0B                  61  02  E1 00109 13$:     BBC     #2, (R1), 14$                           ; 2264
                                                            5A  D4 0010D          CLRL    DISKVBN                                 ; 2267
                                              58 00000000'  EF  9E 0010F          MOVAB   DEMANDZERO, OTHERATRIBS1                ; 2268
                                                            0B  11 00116          BRB     15$                                     ; 2264
                                              5A      0C    A2  D0 00118 14$:     MOVL    12(R2), DISKVBN                         ; 2272
                                              58 00000000'  EF  9E 0011C          MOVAB   BLANKS, OTHERATRIBS1                    ; 2273
                                        09                  61  03  E1 00123 15$:     BBC     #3, (R1), 16$                           ; 2276
                                              59 00000000'  EF  9E 00127          MOVAB   READWRITE, PROTECT                      ; 2278
                                                            07  11 0012E          BRB     17$                                     ;
                                              59 00000000'  EF  9E 00130 16$:     MOVAB   READONLY, PROTECT                       ; 2280
                                 00000000G    00            53  D1 00137 17$:     CMPL    NEXTISD, LNK$GL_FIXISD                  ; 2282
                                                            0D  13 0013E          BEQL    18$                                     ;
                                              50 00000000G  00  D0 00140          MOVL    LNK$GL_CURCLU, R0                       ; 2283
                                        44    A0                53  D1 00147          CMPL    NEXTISD, 68(R0)                         ;
                                                            09  12 0014B          BNEQ    19$                                     ;
                                              56 00000000'  EF  9E 0014D 18$:     MOVAB   FIXUPSECTION, OTHERATRIBS2              ; 2286
                                                            21  11 00154          BRB     22$                                     ;
                                        16                  61  01  E1 00156 19$:     BBC     #1, (R1), 21$                           ; 2289
                                                            09      14  A3  E8 0015A          BLBS    20(NEXTISD), 20$                        ; 2291
                                              56 00000000'  EF  9E 0015E          MOVAB   COPYONREF, OTHERATRIBS2                 ;
                                                            10  11 00165          BRB     22$                                     ;
```

```
                        56 00000000'  EF  9E 00167 20$:    MOVAB   ADDRDATA, OTHERATRIBS2                  ;
                                      07  11 0016E         BRB     22$                                     ;
                        56 00000000'  EF  9E 00170 21$:    MOVAB   BLANKS, OTHERATRIBS2                    ; 2294
                           4E         61  E9 00177 22$:    BLBC    (R1), 27$                               ; 2296
                     04    AE 00000000'  EF  9E 0017A       MOVAB   GBLIS_CNTRL_STR, FAO_CTL_STR            ; 2299
                     70    8F            61  93 00182       BITB    (R1), #112                              ; 2302
                                         09  12 00186       BNEQ    23$                                     ;
                        55 00000000'     EF  9E 00188       MOVAB   ALLTIME, MATCH_STR                      ;
                                         37  11 0018F       BRB     27$                                     ;
          03    61                 03    04  ED 00191 23$:    CMPZV   #4, #3, (R1), #3                        ; 2303
                                         09  12 00196       BNEQ    24$                                     ;
                        55 00000000'     EF  9E 00198       MOVAB   NEVER, MATCH_STR                        ;
                                         27  11 0019F       BRB     27$                                     ;
          01    61                 03    04  ED 001A1 24$:    CMPZV   #4, #3, (R1), #1                        ; 2304
                                         09  12 001A6       BNEQ    25$                                     ;
                        55 00000000'     EF  9E 001A8       MOVAB   EQUAL, MATCH_STR                        ;
                                         17  11 001AF       BRB     27$                                     ;
          02    61                 03    04  ED 001B1 25$:    CMPZV   #4, #3, (R1), #2                        ; 2305
                                         09  12 001B6       BNEQ    26$                                     ;
                        55 00000000'     EF  9E 001B8       MOVAB   LSSEQUAL, MATCH_STR                     ;
                                         07  11 001BF       BRB     27$                                     ;
                        55 00000000'     EF  9E 001C1 26$:    MOVAB   BLANKS, MATCH_STR                       ; 2306
                           10            64  91 001C8 27$:    CMPB    (CLUSTER), #16                          ; 2316
                                         48  1B 001CB       BLEQU   30$                                     ;
                                         54  DD 001CD       PUSHL   CLUSTER                                 ; 2321
                              00000000'  EF  9F 001CF       PUSHAB  OUTDES                                  ; 2320
                              00000000'  EF  9F 001D5       PUSHAB  OUTSIZE                                 ;
                              00000000'  EF  9F 001DB       PUSHAB  OBJMD_CNTRL_ST1                         ;
                00000000G     00         04  FB 001E1       CALLS   #4, S^S$FAO                             ;
                              57         50  D0 001E8       MOVL    R0, FAO_ERRCODE                         ;
                              09         57  E8 001EB       BLBS    FAO_ERRCODE, 28$                        ;
                                         57  DD 001EE       PUSHL   FAO_ERRCODE                             ; 2323
                      F3E8    CF         01  FB 001F0       CALLS   #1, FAOFAIL                             ;
                                         17  11 001F5       BRB     29$                                     ;
                           7E 00000000'  EF  3C 001F7 28$:    MOVZWL  OUTSIZE, -(SP)                          ; 2326
                              00000000'  EF  9F 001FE       PUSHAB  OUTLINE                                 ;
                00000000V     EF         02  FB 00204       CALLS   #2, LNK$MAPOUT                          ;
                              6D         50  E9 0020B       BLBC    R0, 32$                                 ;
                              54 00000000'  EF  9E 0020E 29$:    MOVAB   BLANKS, CLUSTER                         ; 2328
          7E    10    A2          18         00  EF 00215 30$:    EXTZV   #0, #24, 16(R2), -(SP)                  ; 2335
                           7E       13    A2  9A 0021B       MOVZBL  19(R2), -(SP)                           ;
                                         55  DD 0021F       PUSHL   MATCH_STR                               ;
                                    14   A2  9F 00221       PUSHAB  20(R2)                                  ;
                                         56  DD 00224       PUSHL   OTHERATRIBS2                            ;
                                         58  DD 00226       PUSHL   OTHERATRIBS1                            ;
                                         59  DD 00228       PUSHL   PROTECT                                 ;
                           7E       07    A2  9A 0022A       MOVZBL  7(R2), -(SP)                            ;
                                         5A  DD 0022E       PUSHL   DISKVBN                                 ;
                                         5B  DD 00230       PUSHL   RELSFX                                  ;
                                    30   AE  DD 00232       PUSHL   BASEVA                                  ;
                                    2C   AE  DD 00235       PUSHL   PROPREFIX                               ;
                           7E       02    A2  3C 00238       MOVZWL  2(R2), -(SP)                            ;
                           7E       0B    A2  9A 0023C       MOVZBL  11(R2), -(SP)                           ;
                                         54  DD 00240       PUSHL   CLUSTER                                 ;
                              00000000'  EF  9F 00242       PUSHAB  OUTDES                                  ; 2331
                              00000000'  EF  9F 00248       PUSHAB  OUTSIZE                                 ;
                                    48   AE  DD 0024E       PUSHL   FAO_CTL_STR                             ; 2335
```

```
                00000000G   00              12   FB 00251          CALLS   #18, SYS$FAO                                    ;
                            57              50   D0 00258          MOVL    R0, FAO_ERRCODE                                 ;
                            09              57   E8 0025B          BLBS    FAO_ERRCODE, 31$                                ;
                                            57   DD 0025E          PUSHL   FAO_ERRCODE                                     ; 2337
                    F378    CF              01   FB 00260          CALLS   #1, FAOFAIL                                     ;
                                            17   11 00265          BRB     33$                                             ;
                            7E 00000000'    EF   3C 00267 31$:     MOVZWL  OUTSIZE, -(SP)                                  ; 2340
                               00000000'    EF   9F 0026E          PUSHAB  OUTLINE                                         ;
                00000000V   EF              02   FB 00274          CALLS   #2, LNK$MAPOUT                                  ;
                            6A              50   E9 0027B 32$:     BLBC    R0, 37$                                         ;
                            54 00000000'    EF   9E 0027E 33$:     MOVAB   BLANKS, CLUSTER                                 ; 2345
                                         FE43   31 00285          BRW     11$                                             ; 2245
                         50 00000000'       EF   08 C1 00288 34$:  ADDL3   #8, LINECNT, R0                                 ; 2353
                50 00000000'    EF              08   00 ED 00290  CMPZV   #0, #8, LNK$GB_LINESPP, R0                     ;
                                            1D   18 00299          BGEQ    35$                                             ;
                00000000'       EF  00000000'   EF   9A 0029B     MOVZBL  LNK$GB_LINESPP, LINECNT                         ; 2356
                                            7E   D4 002A6          CLRL    -(SP)                                           ; 2358
                               00000000'    EF   9F 002A8          PUSHAB  OUTLINE                                         ;
                00000000V   EF              02   FB 002AE          CALLS   #2, LNK$MAPOUT                                  ;
                            6F              50   E9 002B5          BLBC    R0, 39$                                         ;
                            52              01   D0 002B8 35$:     MOVL    #1, I                                           ; 2362
                                            7E   D4 002BB 36$:     CLRL    -(SP)                                           ; 2364
                               00000000'    EF   9F 002BD          PUSHAB  OUTLINE                                         ;
                00000000V   EF              02   FB 002C3          CALLS   #2, LNK$MAPOUT                                  ;
                            5A              50   E9 002CA          BLBC    R0, 39$                                         ;
                                            52   D6 002CD          INCL    I                                               ;
                            03              52   D1 002CF          CMPL    I, #3                                           ;
                                            E7   1B 002D2          BLEQU   36$                                             ;
                            7E 00000000'    EF   9A 002D4          MOVZBL  CHARDEF_STR, -(SP)                              ; 2368
                               00000000'    EF   9F 002DB          PUSHAB  CHARDEF_STR+1                                   ;
                00000000V   EF              02   FB 002E1          CALLS   #2, LNK$MAPOUT                                  ;
                            3C              50   E9 002E8 37$:     BLBC    R0, 39$                                         ;
                               00000000'    EF   9F 002EB          PUSHAB  OUTDES                                          ; 2370
                               00000000'    EF   9F 002F1          PUSHAB  OUTSIZE                                         ;
                               00000000'    EF   9F 002F7          PUSHAB  ABBRVTBL1_STR                                   ;
        00000000G   00                      03   FB 002FD          CALLS   #3, SYS$FAO                                     ;
                    57                      50   D0 00304          MOVL    R0, FAO_ERRCODE                                 ;
                    09                      57   E8 00307          BLBS    FAO_ERRCODE, 38$                                ;
                                            57   DD 0030A          PUSHL   FAO_ERRCODE                                     ; 2372
                F2CC    CF                  01   FB 0030C          CALLS   #1, FAOFAIL                                     ;
                                            17   11 00311          BRB     40$                                             ;
                            7E 00000000'    EF   3C 00313 38$:     MOVZWL  OUTSIZE, -(SP)                                  ; 2375
                               00000000'    EF   9F 0031A          PUSHAB  OUTLINE                                         ;
        00000000V   EF                      02   FB 00320          CALLS   #2, LNK$MAPOUT                                  ;
                    45                      50   E9 00327 39$:     BLBC    R0, 43$                                         ;
                                            52   D4 0032A 40$:     CLRL    I                                               ; 2377
                               00000000'EF  42   DD 0032C 41$:     PUSHL   ISTR_POINTER[I]                                 ; 2380
                               00000000'    EF   9F 00333          PUSHAB  OUTDES                                          ;
                               00000000'    EF   9F 00339          PUSHAB  OUTSIZE                                         ;
                               00000000'    EF   9F 0033F          PUSHAB  ABBRVTBL2_STR                                   ;
        00000000G   00                      04   FB 00345          CALLS   #4, SYS$FAO                                     ;
                    57                      50   D0 0034C          MOVL    R0, FAO_ERRCODE                                 ;
                    09                      57   E8 0034F          BLBS    FAO_ERRCODE, 42$                                ;
                                            57   DD 00352          PUSHL   FAO_ERRCODE                                     ; 2382
                F284    CF                  01   FB 00354          CALLS   #1, FAOFAIL                                     ;
                                            17   11 00359          BRB     44$                                             ;
                            7E 00000000'    EF   3C 0035B 42$:     MOVZWL  OUTSIZE, -(SP)                                  ; 2385
```

```
                          00000000'  EF  9F 00362          PUSHAB  OUTLINE                                          ;
                00000000V EF         02  FB 00368          CALLS   #2, LNK$MAPOUT                                   ;
                          42         50  E9 0036F 43$:     BLBC    R0, 46$                                          ;
                                     52  D6 00372 44$:     INCL    I                                                ; 2377
                          01         52  D1 00374          CMPL    I, #1                                            ;
                                     B3  1B 00377          BLEQU   44$                                              ;
                          00000000'  EF  9F 00379          PUSHAB  OUTDES                                           ; 2389
                          00000000'  EF  9F 0037F          PUSHAB  OUTSIZE                                          ;
                          00000000'  EF  9F 00385          PUSHAB  ABBRVTBL1_STR                                    ;
                00000000G 00         03  FB 0038B          CALLS   #3, SYS$FAO                                      ;
                          57         50  D0 00392          MOVL    R0, FAO_ERRCODE                                  ;
                          08         57  E8 00395          BLBS    FAO_ERRCODE, 45$                                 ;
                                     57  DD 00398          PUSHL   FAO_ERRCODE                                      ; 2391
                    F23E  CF         01  FB 0039A          CALLS   #1, FAOFAIL                                      ;
                                     04  0039F          RET                                                      ;
                          7E 00000000' EF  3C 003A0 45$:     MOVZWL  OUTSIZE, -(SP)                                   ; 2394
                             00000000' EF  9F 003A7          PUSHAB  OUTLINE                                          ;
                00000000V EF         02  FB 003AD          CALLS   #2, LNK$MAPOUT                                   ;
                                     04  003B4 46$:     RET                                                      ; 2397

; Routine Size:  949 bytes,    Routine Base:  $CODE$ + 001B

; 1846          2398  1
```

```
;1848     2399  1 global routine lnk$mapstats : novalue =          ! RUN TIME STATISTICS
;1849     2400  2     begin
;1850     2401  2
;1851     2402  2 !++
;1852     2403  2 ! FUNCTIONAL DESCRIPTION:
;1853     2404  2 !
;1854     2405  2 !       THIS ROUTINE GATHERS SOME STATISTICS OF THE LINK RUN
;1855     2406  2 !       AND OUTPUTS THEM TO THE MAP.
;1856     2407  2 !
;1857     2408  2 ! FORMAL PARAMETERS:
;1858     2409  2 !
;1859     2410  2 !       NONE
;1860     2411  2 !
;1861     2412  2 ! IMPLICIT INPUTS:
;1862     2413  2 !
;1863     2414  2 !       THE MAP FILE MUST HAVE BEEN PREVIOUSLY OPENED.
;1864     2415  2 !       DATA GATHERED DURING THE LINK
;1865     2416  2 !
;1866     2417  2 ! IMPLICIT OUTPUTS:
;1867     2418  2 !
;1868     2419  2 !       EACH LINE IS OUTPUT TO THE MAP ON A NEW PAGE IF NEED BE.
;1869     2420  2 !       THE LINE COUNTER IS INCREMENTED.
;1870     2421  2 !
;1871     2422  2 ! ROUTINE VALUE:
;1872     2423  2 !
;1873     2424  2 !       NOVALUE
;1874     2425  2 !
;1875     2426  2 ! COMPLETION CODES:
;1876     2427  2 !
;1877     2428  2 !       NONE
;1878     2429  2 !
;1879     2430  2 ! SIDE EFFECTS:
;1880     2431  2 !
;1881     2432  2 !       NONE
;1882     2433  2 !
;1883     2434  2 !--
;1884     2435  2     local
;1885     2436  2         fao_errcode,                            ! FAO ERROR CODE
;1886     2437  2         value1 : long,                          ! INTERMEDIATE DATA STORAGE
;1887     2438  2         value2 : long,                          ! INTERMEDIATE DATA STORAGE
;1888     2439  2         value3 : long,                          ! INTERMEDIATE DATA STORAGE
;1889     2440  2         fao_ctl_ptr : ref block [, byte];       ! POINTER TO FAO CONTROL STRING DESCRIPTOR
;1890     2441  2
;1891     2442  2     bind
;1892     2443  2         auxfnb = lnk$gl_mapfil [fdb$t_auxfnb]   ! REFERENCE THE MAP FILE'S AUXILIARY
;1893     2444  2         : block [nam$c_bln, byte];               ! FILENAME BLOCK
;1894     2445  2
;1895     2446  2 !
;1896     2447  2     subhdline = 0;                              ! RESET SUB HEADING
;1897     2448  2
;1898     2449  2     if not newpage () then return;              ! OUTPUT NEW PAGE FOR IMAGE SYNOPSIS
;1899     2450  2
;1900     2451  2     if not mapbox (linkwidehdr) then return;    ! OUTPUT LINK-WIDE SYNOPSIS HEADER
;1901     2452  2
;1902     2453  2 !
;1903     2454  2 ! OUTPUT LINK-WIDE SYNOPSIS SECTION
;1904     2455  2 !
```

```
;1905     2456  2 !
;1906     2457  2 ! VIRTUAL MEMORY LIMITS
;1907     2458  2 !
;1908     2459  2     value2 = .lnk$gl_maxva - .lnk$gl_minva + 1; ! CALCULATE MEMORY SIZE IN BYTES
;1909     2460  2     value1 = (.value2 + 511)/512;               ! CALCULATE MEMORY SIZE IN PAGES
;1910     2461  2
;1911     2462  2     if not lnk$mapout (outline, 0)              ! SKIP A LINE
;1912     2463  2     then
;1913     2464  2         return;
;1914     2465  2
;1915     2466  3     if not (fao_errcode = sys$fao (virmemline, outsize, outdes, .lnk$gl_minva, .lnk$gl_maxva, .value2,
;1916     2467  3             .value2, .value1))                  ! FORMAT LINE
;1917     2468  2     then
;1918     2469  2         faofail (.fao_errcode)                  !
;1919     2470  2     else
;1920     2471  2
;1921     2472  2         if not lnk$mapout (outline, .outsize)   ! OUTPUT LINE
;1922     2473  2         then
;1923     2474  2             return;                             ! NO MORE OUTPUT, I/O FAILURE
;1924     2475  2
;1925     2476  2 !
;1926     2477  2 ! STACK SIZE
;1927     2478  2 !
;1928     2479  2
;1929     2480  3     if not (fao_errcode = sys$fao (stackline, outsize, outdes, .lnk$gw_stack))  ! FORMAT LINE
;1930     2481  2     then
;1931     2482  2         faofail (.fao_errcode)
;1932     2483  2     else
;1933     2484  2
;1934     2485  2         if not lnk$mapout (outline, .outsize)   ! OUTPUT LINE
;1935     2486  2         then
;1936     2487  2             return;                             ! NO MORE OUTPUT, I/O FAILURE
;1937     2488  2
;1938     2489  2 !
;1939     2490  2 ! IMAGE HEADER VIRTUAL BLOCK UNITS
;1940     2491  2 !
;1941     2492  2
;1942     2493  2     if .lnk$gw_hdrblks neq 0                    ! BASE BLOCK IS ALWAYS ONE (IF ANY HEADER)
;1943     2494  2     then
;1944     2495  2
;1945     2496  3         if not (fao_errcode = sys$fao (imghdrblkline, outsize, outdes, 1, .lnk$gw_hdrblks, .lnk$gw_hdrblks))
;1946     2497  2         then
;1947     2498  2             faofail (.fao_errcode)
;1948     2499  2         else
;1949     2500  2
;1950     2501  2             if not lnk$mapout (outline, .outsize)       ! OUTPUT LINE                                    ;
;1951     2502  2             then
;1952     2503  2                 return;                         ! NO MORE OUTPUT, I/O FAILURE                        ;
;1953     2504  2
;1954     2505  2 !
;1955     2506  2 ! IMAGE BINARY VIRTUAL BLOCK UNITS
;1956     2507  2 !
;1957     2508  2
;1958     2509  2     if .lnk$gw_imgblks eql 0                    ! IF NO BLOCKS OF BINARY
;1959     2510  2     then
;1960     2511  3         (value2 = 0; value1 = 0)                ! THAT IS WHAT WE PRINT
;1961     2512  2     else
```

```
;1962     2513  3          (value2 = .lnk$gw_hdrblks + 1;                ! CALCULATE BASE BLOCK
;1963     2514  2          value1 = .value2 + .lnk$gw_imgblks - 1);      ! CALCULATE TOP OF BINARY BLOCKS
;1964     2515  2
;1965     2516  3      if not (fao_errcode = sys$fao (imgbinblkline, outsize, outdes, .value2, .value1, .lnk$gw_imgblks))
;1966     2517  3                                                        ! FORMAT LINE
;1967     2518  2      then
;1968     2519  2          faofail (.fao_errcode)
;1969     2520  2      else
;1970     2521  2
;1971     2522  2          if not lnk$mapout (outline, .outsize)         ! OUTPUT LINE
;1972     2523  2          then
;1973     2524  2              return;                                   ! NO MORE OUTPUT, I/O FAILURE
;1974     2525  2
;1975     2526  2  !
;1976     2527  2  ! IDENTIFICATION
;1977     2528  2  !
;1978     2529  2
;1979     2530  3      if not (fao_errcode = sys$fao (identline, outsize, outdes,  ! FORMAT LINE
;1980     2531  3              lnk$gt_imgnam, lnk$gt_imgid))             ! WITH THE STRINGS
;1981     2532  2      then
;1982     2533  2          faofail (.fao_errcode)
;1983     2534  2      else
;1984     2535  2
;1985     2536  2          if not lnk$mapout (outline, .outsize)         ! OUTPUT LINE
;1986     2537  2          then
;1987     2538  2              return;                                   ! NO MORE OUTPUT, I/O FAILURE
;1988     2539  2
;1989     2540  2  !
;1990     2541  2  ! NUMBER OF FILES
;1991     2542  2  !
;1992     2543  2
;1993     2544  3      if not (fao_errcode = sys$fao (nfilline, outsize, outdes, .lnk$gw_nfiles))  ! FORMAT LINE
;1994     2545  2      then
;1995     2546  2          faofail (.fao_errcode)
;1996     2547  2      else
;1997     2548  2
;1998     2549  2          if not lnk$mapout (outline, .outsize)         ! OUTPUT LINE
;1999     2550  2          then
;2000     2551  2              return;                                   ! NO MORE OUTPUT, I/O FAILURE
;2001     2552  2
;2002     2553  2  !
;2003     2554  2  ! NUMBER OF MODULES
;2004     2555  2  !
;2005     2556  2
;2006     2557  3      if not (fao_errcode = sys$fao (nmodline, outsize, outdes, .lnk$gw_nmodules))        ! FORMAT LINE
;2007     2558  2      then
;2008     2559  2          faofail (.fao_errcode)
;2009     2560  2      else
;2010     2561  2
;2011     2562  2          if not lnk$mapout (outline, .outsize)         ! OUTPUT LINE
;2012     2563  2          then
;2013     2564  2              return;                                   ! NO MORE OUTPUT, I/O FAILURE
;2014     2565  2
;2015     2566  2  !
;2016     2567  2  ! NUMBER OF P-SECTS
;2017     2568  2  !
;2018     2569  2
```

```
; 2019          2570  3     if not (fao_errcode = sys$fao (npscline, outsize, outdes, .lnk$gw_npsects)) ! FORMAT LINE
; 2020          2571  2     then
; 2021          2572  2         faofail (.fao_errcode)
; 2022          2573  2     else
; 2023          2574  2
; 2024          2575  2         if not lnk$mapout (outline, .outsize)   ! OUTPUT LINE
; 2025          2576  2         then
; 2026          2577  2             return;                             ! NO MORE OUTPUT, I/O FAILURE
; 2027          2578  2
; 2028          2579  2 !
; 2029          2580  2 ! NUMBER OF GLOBAL SYMBOLS
; 2030          2581  2 !
; 2031          2582  2
; 2032          2583  3     if not (fao_errcode = sys$fao (nsymline, outsize, outdes, .lnk$gw_nsymbols))        ! FORMAT LINE
; 2033          2584  2     then
; 2034          2585  2         faofail (.fao_errcode)
; 2035          2586  2     else
; 2036          2587  2
; 2037          2588  2         if not lnk$mapout (outline, .outsize)   ! OUTPUT LINE
; 2038          2589  2         then
; 2039          2590  2             return;                             ! NO MORE OUTPUT, I/O FAILURE
; 2040          2591  2
; 2041          2592  2 !
; 2042          2593  2 ! INCLUDING UNDEFINED COUNT OF:
; 2043          2594  2 !
; 2044          2595  2
; 2045          2596  3     if (.lnk$gw_nudfsyms neq 0)
; 2046          2597  2     then                                          !
; 2047          2598  3         begin                                     !
; 2048          2599  3
; 2049          2600  4         if not (fao_errcode = sys$fao (nundfline, outsize, outdes, .lnk$gw_nudfsyms))   ! FORMAT LINE
; 2050          2601  3         then
; 2051          2602  3             faofail (.fao_errcode)
; 2052          2603  3         else
; 2053          2604  3
; 2054          2605  3             if not lnk$mapout (outline, .outsize)       ! OUTPUT LINE
; 2055          2606  3             then
; 2056          2607  3                 return;                         ! NO MORE OUTPUT, I/O FAILURE
; 2057          2608  3
; 2058          2609  2         end;
; 2059          2610  2
; 2060          2611  2 !
; 2061          2612  2 ! NUMBER OF CROSS REFERENCES
; 2062          2613  2 !
; 2063          2614  2
; 2064          2615  2     if .lnk$gw_ncrosrfs neq 0
; 2065          2616  2     then
; 2066          2617  2
; 2067          2618  3         if not (fao_errcode = sys$fao (ncrosrefs, outsize, outdes, .lnk$gw_ncrosrfs))
; 2068          2619  2         then
; 2069          2620  2             faofail (.fao_errcode)
; 2070          2621  2         else
; 2071          2622  2
; 2072          2623  2             if not lnk$mapout (outline, .outsize) then return;
; 2073          2624  2
; 2074          2625  2 !
; 2075          2626  2 ! NUMBER OF IMAGE SECTIONS
```

```
;  2076     2627  2 !
;  2077     2628  2
;  2078     2629  3     if (.lnk$gw_nisects neq 0)
;  2079     2630  2     then
;  2080     2631  3         begin
;  2081     2632  3
;  2082     2633  4         if not (fao_errcode = sys$fao (niscline, outsize, outdes, .lnk$gw_nisects))     ! FORMAT LINE
;  2083     2634  3         then
;  2084     2635  3             faofail (.fao_errcode)
;  2085     2636  3         else
;  2086     2637  3
;  2087     2638  3             if not lnk$mapout (outline, .outsize)       ! OUTPUT LINE
;  2088     2639  3             then
;  2089     2640  3                 return;                             ! NO MORE OUTPUT, I/O FAILURE
;  2090     2641  3
;  2091     2642  2         end;
;  2092     2643  2
;  2093     2644  2     if not .lnk$gl_ctlmsk [lnk$v_sys]
;  2094     2645  2     then
;  2095     2646  3         begin                                                                          ;
;  2096     2647  3 !
;  2097     2648  3 ! USER TRANSFER ADDRESS
;  2098     2649  3 !
;  2099     2650  3
;  2100     2651  4         if (.lnk$gl_tfrpsc neq 0)
;  2101     2652  3         then
;  2102     2653  4             begin
;  2103     2654  4
;  2104     2655  5             if not (fao_errcode = sys$fao (usrtfrline, outsize, outdes, .lnk$gl_tfradr))        ! FORMAT LIN
;  2105     2656  4             then
;  2106     2657  4                 faofail (.fao_errcode)
;  2107     2658  4             else
;  2108     2659  4
;  2109     2660  4                 if not lnk$mapout (outline, .outsize)   ! OUTPUT LINE
;  2110     2661  4                 then
;  2111     2662  4                     return;                         ! NO MORE OUTPUT, I/O FAILURE
;  2112     2663  4
;  2113     2664  3             end;                                    !
;  2114     2665  3
;  2115     2666  3 !
;  2116     2667  3 ! DEBUGGER TRANSFER ADDRESS
;  2117     2668  3 !
;  2118     2669  3
;  2119     2670  4         if (.lnk$gl_dbgtfps neq 0)
;  2120     2671  3         then
;  2121     2672  4             begin
;  2122     2673  4
;  2123     2674  5             if not (fao_errcode = sys$fao (dbgtfrline, outsize, outdes, .lnk$gl_dbgtfr))        ! FORMAT LIN
;  2124     2675  4             then
;  2125     2676  4                 faofail (.fao_errcode)
;  2126     2677  4             else
;  2127     2678  4
;  2128     2679  4                 if not lnk$mapout (outline, .outsize)   ! OUTPUT LINE
;  2129     2680  4                 then
;  2130     2681  4                     return;                         ! NO MORE OUTPUT, I/O FAILURE
;  2131     2682  4
;  2132     2683  3             end;                                    !
```

```
;  2133          2684  3
;  2134          2685  3 !
;  2135          2686  3 ! COUNT OF ADDRESS FIXUPS
;  2136          2687  3 !
;  2137          2688  3
;  2138          2689  3         if .lnk$gl_adrefs neq 0
;  2139          2690  3         then
;  2140          2691  4             begin
;  2141          2692  4
;  2142          2693  5             if not (fao_errcode = sys$fao (nadrefline, outsize, outdes, .lnk$gl_adrefs))
;  2143          2694  4             then
;  2144          2695  4                 faofail (.fao_errcode)
;  2145          2696  4             else
;  2146          2697  4
;  2147          2698  4                 if not lnk$mapout (outline, .outsize) then return;
;  2148          2699  4
;  2149          2700  3             end;
;  2150          2701  3
;  2151          2702  3 !
;  2152          2703  3 ! COUNT OF SYMBOL REFERENCES IN SHAREABLE IMAGES
;  2153          2704  3 !
;  2154          2705  3
;  2155          2706  3         if .lnk$gl_shrsyms neq 0
;  2156          2707  3         then
;  2157          2708  4             begin
;  2158          2709  4
;  2159          2710  5             if not (fao_errcode = sys$fao (nshrsymline, outsize, outdes, .lnk$gl_shrsyms))
;  2160          2711  4             then
;  2161          2712  4                 faofail (.fao_errcode)
;  2162          2713  4             else
;  2163          2714  4
;  2164          2715  4                 if not lnk$mapout (outline, .outsize) then return;
;  2165          2716  4
;  2166          2717  3             end;
;  2167          2718  3
;  2168          2719  3 !
;  2169          2720  3 ! OTS TRANSFER ADDRESS
;  2170          2721  3 !
;  2171          2722  3
;  2172          2723  3         if .lnk$gl_otsepdsc neq 0               ! IF THE OTS TRANSFER ADDRESS WAS
;  2173          2724  3         then
;  2174          2725  4             begin                               ! FOUND THEN OUTPUT IT TO
;  2175          2726  4
;  2176          2727  4             bind
;  2177          2728  4                 otsepsnb = .lnk$gl_otsepdsc - .lnk$gl_otsepdsc [sym$b_namlng] - snb$c_fxdlen : block [, byte
;  2178          2729  4
;  2179          2730  5             if not (fao_errcode = sys$fao (otstfrline, outsize, outdes,         ! THE MAP ALSO. INCLUDE
;  2180          2731  5                     otsepsnb [snb$b_namlng],    ! THE NAME OF THE RESERVED
;  2181          2732  5                     .lnk$gl_otsepdsc [sym$l_value]))    ! ENTRY POINT AS WELL AS ADDRESS
;  2182          2733  4             then
;  2183          2734  4                 faofail (.fao_errcode)          ! REPORT ANY FORMATTING ERROR
;  2184          2735  4             else
;  2185          2736  4
;  2186          2737  4                 if not lnk$mapout (outline, .outsize)   ! OUTPUT IT
;  2187          2738  4                 then
;  2188          2739  4                     return;                     ! EXITING ON ERROR
;  2189          2740  3             end;
```

```
;  2190     2741  2          end;
;  2191     2742  2
;  2192     2743  2      !
;  2193     2744  2      ! IMAGE TYPE
;  2194     2745  2      !
;  2195     2746  2          value2 = blanks;
;  2196     2747  2          fao_ctl_ptr = ch$ptr (imgatrline, 0);       ! ASSUME IMAGE IS NOT SHARABLE
;  2197     2748  2
;  2198     2749  2          if .lnk$gl_ctlmsk [lnk$v_exe]               ! SELECT EXE IMAGE PRINT
;  2199     2750  2          then
;  2200     2751  2              value1 = exeimage;                      ! LINE
;  2201     2752  2
;  2202     2753  2          if .lnk$gl_ctlmsk [lnk$v_sys]               ! SELECT SYS IMAGE PRINT
;  2203     2754  2          then
;  2204     2755  2              value1 = sysimage;                      ! LINE
;  2205     2756  2
;  2206     2757  2          if .lnk$gl_ctlmsk [lnk$v_shr]               ! SELECT SHR IMAGE PRINT
;  2207     2758  3          then
;  2208     2759  3              begin
;  2209     2760  3              fao_ctl_ptr = ch$ptr (imgshrline, 0);   ! USE SHARABLE IMAGE FAO CONTROL STRING
;  2210     2761  3
;  2211     2762  3              if .lnk$gl_ctlmsk [lnk$v_picimg] then value1 = pic else value1 = nopic;
;  2212     2763  3
;  2213     2764  4              value2 = shrimage;
;  2214     2765  4              value3 = (selectone .lnk$gb_matchctl of
;  2215     2766  4                  set
;  2216     2767  4                  [isd$k_matall] : alltime;           ! SELECT MATCH = ALWAYS
;  2217     2768  4                  [isd$k_matnev] : never;             ! SELECT MATCH = NEVER
;  2218     2769  4                  [isd$k_matequ] : equal;             ! SELECT MATCH = EQUAL
;  2219     2770  4                  [isd$k_matleq] : lssequal;          ! SELECT MATCH = LESS/EQUAL
;  2220     2771  3                  [otherwise] : blanks;               ! NO MATCH SET
;  2221     2772  2                  tes);
;  2222     2773  2              end;
;  2223     2774  3          begin
;  2224     2775  3
;  2225     2776  3          bind
;  2226     2777  3              gsmajid = .lnk$gl_matchid<24, 8, 0>,    ! GLOB SEC MAJOR ID
;  2227     2778  3              gsminid = .lnk$gl_matchid<0, 24, 0>;    ! GLOB SEC MINOR ID
;  2228     2779  3
;  2229     2780  4          if not (fao_errcode = sys$fao (.fao_ctl_ptr, outsize, outdes, .value1, .value2, .value3, gsmajid, gsmini
;  2230     2781  4              )                                       ! FORMAT LINE
;  2231     2782  3          then
;  2232     2783  3              faofail (.fao_errcode)
;  2233     2784  3          else
;  2234     2785  3
;  2235     2786  3              if not lnk$mapout (outline, .outsize)   ! OUTPUT LINE
;  2236     2787  3              then
;  2237     2788  3                  return;                             ! NO MORE OUTPUT, I/O FAILURE
;  2238     2789  3
;  2239     2790  2          end;
;  2240     2791  2      !
;  2241     2792  2      !       MAP FORMAT LINE
;  2242     2793  2      !
;  2243     2794  2          if .lnk$gl_ctlmsk [lnk$v_brief]             ! SELECT BRIEF FIELD
;  2244     2795  2          then
;  2245     2796  2              value1 = briefmap
;  2246     2797  2          else
```

```
;  2247          2798  2
;  2248          2799  2          if .lnk$gl_ctlmsk [lnk$v_long]          ! SELECT LONG FIELD
;  2249          2800  2          then
;  2250          2801  2              value1 = longmap
;  2251          2802  2          else
;  2252          2803  2              value1 = defaultmap;
;  2253          2804  2
;  2254          2805  2      if .lnk$gl_ctlmsk [lnk$v_cros]              ! SELECT POSSIBLE CREF SUFFIX
;  2255          2806  2      then
;  2256          2807  2          value2 = crefmap
;  2257          2808  2      else
;  2258          2809  2          value2 = blanks;
;  2259          2810  2
;  2260          2811  3      if not (fao_errcode = sys$fao (mapformat, outsize, outdes, .value1, .value2,        ! FORMAT THE LINE
;  2261          2812  3              .auxfnb [nam$b_rsl], .auxfnb [nam$l_rsa]))
;  2262          2813  2      then
;  2263          2814  2          faofail (.fao_errcode)                  ! REPORTING FAILURE
;  2264          2815  2      else
;  2265          2816  2
;  2266          2817  2          if not lnk$mapout (outline, .outsize)   ! OUTPUT THE LINE
;  2267          2818  2          then
;  2268          2819  2              return;                             ! GIVING UP ON FAILURE
;  2269          2820  2
;  2270          2821  3      if not (fao_errcode = sys$fao (maplength, outsize, outdes, .mapestim))      ! FORMAT LENGTH ESTIMATE LIN
;  2271          2822  2      then
;  2272          2823  2          faofail (.fao_errcode)                  ! AND GIVE UP ON FAILURE
;  2273          2824  2      else
;  2274          2825  2
;  2275          2826  2          if not lnk$mapout (outline, .outsize) then return;      ! OUTPUT THE LINE GIVING UP ON ERROR
;  2276          2827  2
;  2277          2828  2 !
;  2278          2829  2 ! DONE WITH LINK-WIDE SYNOPSIS
;  2279          2830  2 !
;  2280          2831  2      sys$gettim (lnk$gq_endtim);                 ! GET THE TIME NOW
;  2281          2832  2 !
;  2282          2833  2 !       NOW GIVE THEM THE RUN STATISTICS
;  2283          2834  2 !
;  2284          2835  2
;  2285          2836  2      if not mapbox (linkstats) then return;      ! GIVE UP ON FAILURE OF BOX HEADING
;  2286          2837  2
;  2287          2838  2      lnk$statsout ();                            ! AND GO DO THE WORK
;  2288          2839  2      return;
;  2289          2840  1      end;


                                        0FFC 00000          .ENTRY  LNK$MAPSTATS, Save R2,R3,R4,R5,R6,R7,R8,R9,-; 2399
                                                                    R10,R11                                       ;
                                5B      F222    CF  9E 00002        MOVAB   FAOFAIL, R11                          ;
                              5A 00000000G      00  9E 00007        MOVAB   SYS$FAO, R10                          ;
                              59 00000000V      EF  9E 0000E        MOVAB   LNK$MAPOUT, R9                        ;
                              58 00000000'      EF  9E 00015        MOVAB   BLANKS, R8                            ;
                              57 00000000'      EF  9E 0001C        MOVAB   OUTSIZE, R7                           ;
                    56 00000000G  00                26  C1 00023    ADDL3   #38, LNK$GL_MAPFIL, R6                ; 2443
                                            34      A7  D4 0002B    CLRL    SUBHDLINE                             ; 2447
```

```
                00000000V  EF              00  FB 0002E          CALLS   #0, NEWPAGE                                  ; 2449
                           6A                  50  E9 00035          BLBC    R0, 2$
                                     026D      C8  9F 00038          PUSHAB  LINKWIDEHDR                                 ; 2451
                00000000V  EF                  01  FB 0003C          CALLS   #1, MAPBOX
                           5C                  50  E9 00043          BLBC    R0, 2$
             50 00000000G  00 00000000G        00  C3 00046          SUBL3   LNK$GL_MINVA, LNK$GL_MAXVA, R0              ; 2459
                           52       01         A0  9E 00052          MOVAB   1(R0), VALUE2
                           50     01FF         C2  9E 00056          MOVAB   511(R2), R0                                 ; 2460
             54            50 00000200        8F  C7 0005B          DIVL3   #512, R0, VALUE1
                                               7E  D4 00063          CLRL    -(SP)                                       ; 2462
                                     FF74      C7  9F 00065          PUSHAB  OUTLINE
                           69                  02  FB 00069          CALLS   #2, LNK$MAPOUT
                           60                  50  E9 0006C          BLBC    R0, 5$
                                               14  BB 0006F          PUSHR   #^M<R2,R4>                                  ; 2467
                                               52  DD 00071          PUSHL   VALUE2                                      ; 2466
                                00000000G      00  DD 00073          PUSHL   LNK$GL_MAXVA
                                00C00000G      00  DD 00079          PUSHL   LNK$GL_MINVA
                                       F8      A7  9F 0007F          PUSHAB  OUTDES
                                               57  DD 00082          PUSHL   R7
                                     FBE4      C8  9F 00084          PUSHAB  VIRMEMLINE
                           6A                  08  FB 00088          CALLS   #8, SYS$FAO
                           53                  50  D0 0008B          MOVL    R0, FAO_ERRCODE
                           07                  53  E8 0008E          BLBS    FAO_ERRCODE, 1$
                                               53  DD 00091          PUSHL   FAO_ERRCODE                                 ; 2469
                           6B                  01  FB 00093          CALLS   #1, FAOFAIL
                                               0D  11 00096          BRB     3$
                           7E                  67  3C 00098 1$:      MOVZWL  OUTSIZE, -(SP)                              ; 2472
                                     FF74      C7  9F 0009B          PUSHAB  OUTLINE
                           69                  02  FB 0009F          CALLS   #2, LNK$MAPOUT
                           5F                  50  E9 000A2 2$:      BLBC    R0, 8$
                           7E 00000000G        00  3C 000A5 3$:      MOVZWL  LNK$GW_STACK, -(SP)                         ; 2480
                                       F8      A7  9F 000AC          PUSHAB  OUTDES
                                               57  DD 000AF          PUSHL   R7
                                     FC0C      C8  9F 000B1          PUSHAB  STACKLINE
                           6A                  04  FB 000B5          CALLS   #4, SYS$FAO
                           53                  50  D0 000B8          MOVL    R0, FAO_ERRCODE
                           07                  53  E8 000BB          BLBS    FAO_ERRCODE, 4$
                                               53  DD 000BE          PUSHL   FAO_ERRCODE                                 ; 2482
                           6B                  01  FB 000C0          CALLS   #1, FAOFAIL
                                               0D  11 000C3          BRB     6$
                           7E                  67  3C 000C5 4$:      MOVZWL  OUTSIZE, -(SP)                              ; 2485
                                     FF74      C7  9F 000C8          PUSHAB  OUTLINE                                     ;
                           69                  02  FB 000CC          CALLS   #2, LNK$MAPOUT
                           76                  50  E9 000CF 5$:      BLBC    R0, 13$
             50 00000000G  00 3C 000D2 6$:      MOVZWL  LNK$GW_HDRBLKS, R0                                          ; 2493 ;
                                               2C  13 000D9          BEQL    9$
                                               50  DD 000DB          PUSHL   R0                                          ; 2496
                                               50  DD 000DD          PUSHL   R0
                                               01  DD 000DF          PUSHL   #1
                                       F8      A7  9F 000E1          PUSHAB  OUTDES
                                               57  DD 000E4          PUSHL   R7
                                     FCB4      C8  9F 000E6          PUSHAB  IMGHDRBLKLINE
                           6A                  06  FB 000EA          CALLS   #6, SYS$FAO
                           53                  50  D0 000ED          MOVL    R0, FAO_ERRCODE
                           07                  53  E8 000F0          BLBS    FAO_ERRCODE, 7$
                                               53  DD 000F3          PUSHL   FAO_ERRCODE                                 ; 2498
                           6B                  01  FB 000F5          CALLS   #1, FAOFAIL
```

```
                 0D  11 000F8           BRB     9$                                      ;
7E               67  3C 000FA 7$:       MOVZWL  OUTSIZE, -(SP)                          ; 2501
       FF74      C7  9F 000FD           PUSHAB  OUTLINE                                 ;
69               02  FB 00101           CALLS   #2, LNK$MAPOUT                          ;
73               50  E9 00104 8$:       BLBC    R0, 16$                                 ;
50 00000000G     00  3C 00107 9$:       MOVZWL  LNK$GW_IMGBLKS, R0                      ; 2509
                 06  12 0010E           BNEQ    10$                                     ;
                 52  D4 00110           CLRL    VALUE2                                  ; 2511
                 54  D4 00112           CLRL    VALUE1                                  ;
                 0B  11 00114           BRB     11$                                     ;
52 00000000G     00  3C 00116 10$:       MOVZWL  LNK$GW_HDRBLKS, VALUE2                  ; 2513
54             8240  9E 0011D           MOVAB   (VALUE2)+[R0], VALUE1                   ; 2514
                 50  DD 00121 11$:       PUSHL   R0                                      ; 2516
                 14  BB 00123           PUSHR   #^M<R2,R4>                              ;
         F8      A7  9F 00125           PUSHAB  OUTDES                                  ;
                 57  DD 00128           PUSHL   R7                                      ;
       FD00      C8  9F 0012A           PUSHAB  IMGBINBLKLINE                           ;
6A               06  FB 0012E           CALLS   #6, SYS$FAO                             ;
53               50  D0 00131           MOVL    R0, FAO_ERRCODE                         ;
07               53  E8 00134           BLBS    FAO_ERRCODE, 12$                        ;
                 53  DD 00137           PUSHL   FAO_ERRCODE                             ; 2519
6B               01  FB 00139           CALLS   #1, FAOFAIL                             ;
                 0D  11 0013C           BRB     14$                                     ;
7E               67  3C 0013E 12$:       MOVZWL  OUTSIZE, -(SP)                          ; 2522
       FF74      C7  9F 00141           PUSHAB  OUTLINE                                 ;
69               02  FB 00145           CALLS   #2, LNK$MAPOUT                          ;
5C               50  E9 00148 13$:       BLBC    R0, 19$                                 ;
   00000000G     00  9F 0014B 14$:       PUSHAB  LNK$GT_IMGID                            ; 2530
   00000000G     00  9F 00151           PUSHAB  LNK$GT_IMGNAM                           ;
         F8      A7  9F 00157           PUSHAB  OUTDES                                  ;
                 57  DD 0015A           PUSHL   R7                                      ;
       FD34      C8  9F 0015C           PUSHAB  IDENTLINE                               ;
6A               05  FB 00160           CALLS   #5, SYS$FAO                             ;
53               50  D0 00163           MOVL    R0, FAO_ERRCODE                         ;
07               53  E8 00166           BLBS    FAO_ERRCODE, 15$                        ;
                 53  DD 00169           PUSHL   FAO_ERRCODE                             ; 2533
6B               01  FB 0016B           CALLS   #1, FAOFAIL                             ;
                 0D  11 0016E           BRB     17$                                     ;
7E               67  3C 00170 15$:       MOVZWL  OUTSIZE, -(SP)                          ; 2536
       FF74      C7  9F 00173           PUSHAB  OUTLINE                                 ;
69               02  FB 00177           CALLS   #2, LNK$MAPOUT                          ;
57               50  E9 0017A 16$:       BLBC    R0, 22$                                 ;
7E 00000000G     00  3C 0017D 17$:       MOVZWL  LNK$GW_NFILES, -(SP)                    ; 2544
         F8      A7  9F 00184           PUSHAB  OUTDES                                  ;
                 57  DD 00187           PUSHL   R7                                      ;
       FD58      C8  9F 00189           PUSHAB  NFILLINE                                ;
6A               04  FB 0018D           CALLS   #4, SYS$FAO                             ;
53               50  D0 00190           MOVL    R0, FAO_ERRCODE                         ;
07               53  E8 00193           BLBS    FAO_ERRCODE, 18$                        ;
                 53  DD 00196           PUSHL   FAO_ERRCODE                             ; 2546
6B               01  FB 00198           CALLS   #1, FAOFAIL                             ;
                 0D  11 0019B           BRB     20$                                     ;
7E               67  3C 0019D 18$:       MOVZWL  OUTSIZE, -(SP)                          ; 2549
       FF74      C7  9F 001A0           PUSHAB  OUTLINE                                 ;
69               02  FB 001A4           CALLS   #2, LNK$MAPOUT                          ;
57               50  E9 001A7 19$:       BLBC    R0, 25$                                 ;
7E 00000000G     00  3C 001AA 20$:       MOVZWL  LNK$GW_NMODULES, -(SP)                  ; 2557
```

```
                F8    A7  9F 001B1          PUSHAB  OUTDES                                  ;
                      57  DD 001B4          PUSHL   R7                                      ;
              FD80    C8  9F 001B6          PUSHAB  NMODLINE                                ;
6A                    04  FB 001BA          CALLS   #4, SYS$FAO                             ;
53                    50  D0 001BD          MOVL    R0, FAO_ERRCODE                         ;
07                    53  E8 001C0          BLBS    FAO_ERRCODE, 21$                        ;
                      53  DD 001C3          PUSHL   FAO_ERRCODE                             ; 2559
6B                    01  FB 001C5          CALLS   #1, FAOFAIL                             ;
                      0D  11 001C8          BRB     23$                                     ;
7E                    67  3C 001CA 21$:     MOVZWL  OUTSIZE, -(SP)                          ; 2562
              FF74    C7  9F 001CD          PUSHAB  OUTLINE                                 ;
69                    02  FB 001D1          CALLS   #2, LNK$MAPOUT                          ;
57                    50  E9 001D4 22$:     BLBC    R0, 28$                                 ;
7E 00000000G          00  3C 001D7 23$:     MOVZWL  LNK$GW_NPSECTS, -(SP)                   ; 2570
                F8    A7  9F 001DE          PUSHAB  OUTDES                                  ;
                      57  DD 001E1          PUSHL   R7                                      ;
              FDB0    C8  9F 001E3          PUSHAB  NPSCLINE                                ;
6A                    04  FB 001E7          CALLS   #4, SYS$FAO                             ;
53                    50  D0 001EA          MOVL    R0, FAO_ERRCODE                         ;
07                    53  E8 001ED          BLBS    FAO_ERRCODE, 24$                        ;
                      53  DD 001F0          PUSHL   FAO_ERRCODE                             ; 2572
6B                    01  FB 001F2          CALLS   #1, FAOFAIL                             ;
                      0D  11 001F5          BRB     26$                                     ;
7E                    67  3C 001F7 24$:     MOVZWL  OUTSIZE, -(SP)                          ; 2575
              FF74    C7  9F 001FA          PUSHAB  OUTLINE                                 ;
69                    02  FB 001FE          CALLS   #2, LNK$MAPOUT                          ;
5B                    50  E9 00201 25$:     BLBC    R0, 31$                                 ;
7E 00000000G          00  3C 00204 26$:     MOVZWL  LNK$GW_NSYMBOLS, -(SP)                  ; 2583
                F8    A7  9F 0020B          PUSHAB  OUTDES                                  ;
                      57  DD 0020E          PUSHL   R7                                      ;
              FDDC    C8  9F 00210          PUSHAB  NSYMLINE                                ;
6A                    04  FB 00214          CALLS   #4, SYS$FAO                             ;
53                    50  D0 00217          MOVL    R0, FAO_ERRCODE                         ;
07                    53  E8 0021A          BLBS    FAO_ERRCODE, 27$                        ;
                      53  DD 0021D          PUSHL   FAO_ERRCODE                             ; 2585
6B                    01  FB 0021F          CALLS   #1, FAOFAIL                             ;
                      0D  11 00222          BRB     29$                                     ;
7E                    67  3C 00224 27$:     MOVZWL  OUTSIZE, -(SP)                          ; 2588
              FF74    C7  9F 00227          PUSHAB  OUTLINE                                 ;
69                    02  FB 0022B          CALLS   #2, LNK$MAPOUT                          ;
5F                    50  E9 0022E 28$:     BLBC    R0, 34$                                 ;
50 00000000G          00  3C 00231 29$:     MOVZWL  LNK$GW_NUDFSYMS, R0                     ; 2596
                      28  13 00238          BEQL    32$                                     ;
                      50  DD 0023A          PUSHL   R0                                      ; 2600
                F8    A7  9F 0023C          PUSHAB  OUTDES                                  ;
                      57  DD 0023F          PUSHL   R7                                      ;
              FE0C    C8  9F 00241          PUSHAB  NUNDFLINE                               ;
6A                    04  FB 00245          CALLS   #4, SYS$FAO                             ;
53                    50  D0 00248          MOVL    R0, FAO_ERRCODE                         ;
07                    53  E8 0024B          BLBS    FAO_ERRCODE, 30$                        ;
                      53  DD 0024E          PUSHL   FAO_ERRCODE                             ; 2602
6B                    01  FB 00250          CALLS   #1, FAOFAIL                             ;
                      0D  11 00253          BRB     32$                                     ;
7E                    67  3C 00255 30$:     MOVZWL  OUTSIZE, -(SP)                          ; 2605
              FF74    C7  9F 00258          PUSHAB  OUTLINE                                 ;
69                    02  FB 0025C          CALLS   #2, LNK$MAPOUT                          ;
5F                    50  E9 0025F 31$:     BLBC    R0, 37$                                 ;
```

```
                50 00000000G   00   3C 00262 32$:    MOVZWL  LNK$GW_NCROSRFS, R0                 ; 2615
                               28   13 00269         BEQL    35$                                ;
                               50   DD 0026B         PUSHL   R0                                 ; 2618
                                  F8   A7 9F 0026D         PUSHAB  OUTDES                         ;
                               57   DD 00270         PUSHL   R7                                 ;
                                FE3C   C8 9F 00272         PUSHAB  NCROSREFS                      ;
                6A                   04   FB 00276         CALLS   #4, SYS$FAO                    ;
                53                   50   D0 00279         MOVL    R0, FAO_ERRCODE                ;
                07                   53   E8 0027C         BLBS    FAO_ERRCODE, 33$               ;
                                     53   DD 0027F         PUSHL   FAO_ERRCODE                    ; 2620
                6B                   01   FB 00281         CALLS   #1, FAOFAIL                    ;
                                     0D   11 00284         BRB     35$                            ;
                7E                   67   3C 00286 33$:    MOVZWL  OUTSIZE, -(SP)                 ; 2623
                                FF74   C7   9F 00289         PUSHAB  OUTLINE                        ;
                69                   02   FB 0028D         CALLS   #2, LNK$MAPOUT                 ;
                6D                   50   E9 00290 34$:    BLBC    R0, 41$                        ;
                50 00000000G   00   3C 00293 35$:    MOVZWL  LNK$GW_NISECTS, R0                 ; 2629
                               28   13 0029A         BEQL    38$                                ;
                               50   DD 0029C         PUSHL   R0                                 ; 2633
                                  F8   A7 9F 0029E         PUSHAB  OUTDES                         ;
                               57   DD 002A1         PUSHL   R7                                 ;
                                FE68   C8 9F 002A3         PUSHAB  NISCLINE                       ;
                6A                   04   FB 002A7         CALLS   #4, SYS$FAO                    ;
                53                   50   D0 002AA         MOVL    R0, FAO_ERRCODE                ;
                07                   53   E8 002AD         BLBS    FAO_ERRCODE, 36$               ;
                                     53   DD 002B0         PUSHL   FAO_ERRCODE                    ; 2635
                6B                   01   FB 002B2         CALLS   #1, FAOFAIL                    ;
                                     0D   11 002B5         BRB     38$                            ;
                7E                   67   3C 002B7 36$:    MOVZWL  OUTSIZE, -(SP)                 ; 2638
                                FF74   C7   9F 002BA         PUSHAB  OUTLINE                        ;
                69                   02   FB 002BE         CALLS   #2, LNK$MAPOUT                 ;
                70                   50   E9 002C1 37$:    BLBC    R0, 44$                        ;
03 00000000G    00                   03   E1 002C4 38$:    BBC     #3, LNK$GL_CTLMSK, 39$         ; 2644
                                0107   31 002CC         BRW     54$                                ;
                   00000000G    00   D5 002CF 39$:    TSTL    LNK$GL_TFRPSC                  ; 2651
                                2C   13 002D5         BEQL    42$                                ;
                   00000000G    00   DD 002D7         PUSHL   LNK$GL_TFRADR                  ; 2655
                                  F8   A7 9F 002DD         PUSHAB  OUTDES                         ;
                               57   DD 002E0         PUSHL   R7                                 ;
                                FF5C   C8 9F 002E2         PUSHAB  USRTFRLINE                     ;
                6A                   04   FB 002E6         CALLS   #4, SYS$FAO                    ;
                53                   50   D0 002E9         MOVL    R0, FAO_ERRCODE                ;
                07                   53   E8 002EC         BLBS    FAO_ERRCODE, 40$               ;
                                     53   DD 002EF         PUSHL   FAO_ERRCODE                    ; 2657
                6B                   01   FB 002F1         CALLS   #1, FAOFAIL                    ;
                                     0D   11 002F4         BRB     42$                            ;
                7E                   67   3C 002F6 40$:    MOVZWL  OUTSIZE, -(SP)                 ; 2660
                                FF74   C7   9F 002F9         PUSHAB  OUTLINE                        ;
                69                   02   FB 002FD         CALLS   #2, LNK$MAPOUT                 ;
                62                   50   E9 00300 41$:    BLBC    R0, 47$                        ;
                   00000000G    00   D5 00303 42$:    TSTL    LNK$GL_DBGTFPS                 ; 2670
                                2C   13 00309         BEQL    45$                                ;
                   00000000G    00   DD 0030B         PUSHL   LNK$GL_DBGTFR                  ; 2674
                                  F8   A7 9F 00311         PUSHAB  OUTDES                         ;
                               57   DD 00314         PUSHL   R7                                 ;
                                FF04   C8 9F 00316         PUSHAB  DBGTFRLINE                     ;
                6A                   04   FB 0031A         CALLS   #4, SYS$FAO                    ;
```

```
                                53   50  DO 0031D          MOVL    R0, FAO_ERRCODE                 ;
                                07   53  E8 00320          BLBS    FAO_ERRCODE, 43$                ;
                                     53  DD 00323          PUSHL   FAO_ERRCODE                     ; 2676
                                6B   01  FB 00325          CALLS   #1, FAOFAIL                     ;
                                     0D  11 00328          BRB     45$                             ;
                                7E   67  3C 0032A 43$:     MOVZWL  OUTSIZE, -(SP)                  ; 2679
                                FF74 C7  9F 0032D          PUSHAB  OUTLINE                         ;
                                69   02  FB 00331          CALLS   #2, LNK$MAPOUT                  ;
                                5F   50  E9 00334 44$:     BLBC    R0, 50$                         ;
                                50 00000000G 00 DO 00337 45$: MOVL LNK$GL_ADREFS, R0               ; 2689
                                     28  13 0033E          BEQL    48$                             ;
                                     50  DD 00340          PUSHL   R0                              ; 2693
                                F8   A7  9F 00342          PUSHAB  OUTDES                          ;
                                     57  DD 00345          PUSHL   R7                              ;
                                FE94 C8  9F 00347          PUSHAB  NADREFLINE                      ;
                                6A   04  FB 0034B          CALLS   #4, SYS$FAO                     ;
                                53   50  DO 0034E          MOVL    R0, FAO_ERRCODE                 ;
                                07   53  E8 00351          BLBS    FAO_ERRCODE, 46$                ;
                                     53  DD 00354          PUSHL   FAO_ERRCODE                     ; 2695
                                6B   01  FB 00356          CALLS   #1, FAOFAIL                     ;
                                     0D  11 00359          BRB     48$                             ;
                                7E   67  3C 0035B 46$:     MOVZWL  OUTSIZE, -(SP)                  ; 2698
                                FF74 C7  9F 0035E          PUSHAB  OUTLINE                         ;
                                69   02  FB 00362          CALLS   #2, LNK$MAPOUT                  ;
                                6A   50  E9 00365 47$:     BLBC    R0, 53$                         ;
                                50 00000000G 00 DO 00368 48$: MOVL LNK$GL_SHRSYMS, R0              ; 2706
                                     28  13 0036F          BEQL    51$                             ;
                                     50  DD 00371          PUSHL   R0                              ; 2710
                                F8   A7  9F 00373          PUSHAB  OUTDES                          ;
                                     57  DD 00376          PUSHL   R7                              ;
                                FED8 C8  9F 00378          PUSHAB  NSHRSYMLINE                     ;
                                6A   04  FB 0037C          CALLS   #4, SYS$FAO                     ;
                                53   50  DO 0037F          MOVL    R0, FAO_ERRCODE                 ;
                                07   53  E8 00382          BLBS    FAO_ERRCODE, 49$                ;
                                     53  DD 00385          PUSHL   FAO_ERRCODE                     ; 2712
                                6B   01  FB 00387          CALLS   #1, FAOFAIL                     ;
                                     0D  11 0038A          BRB     51$                             ;
                                7E   67  3C 0038C 49$:     MOVZWL  OUTSIZE, -(SP)                  ; 2715
                                FF74 C7  9F 0038F          PUSHAB  OUTLINE                         ;
                                69   02  FB 00393          CALLS   #2, LNK$MAPOUT                  ;
                                39   50  E9 00396 50$:     BLBC    R0, 53$                         ;
                                50 00000000G 00 DO 00399 51$: MOVL LNK$GL_OTSEPDSC, R0             ; 2723
                                     34  13 003A0          BEQL    54$                             ;
                                51   0F  A0 9A 003A2       MOVZBL  15(R0), R1                      ; 2728
                           51   50       51  C3 003A6     SUBL3   R1, R0, R1                      ;
                                     60  DD 003AA          PUSHL   (R0)                            ; 2732
                                FF   A1  9F 003AC          PUSHAB  -1(R1)                          ; 2731
                                F8   A7  9F 003AF          PUSHAB  OUTDES                          ; 2730
                                     57  DD 003B2          PUSHL   R7                              ;
                                FF34 C8  9F 003B4          PUSHAB  OTSTFRLINE                      ;
                                6A   05  FB 003B8          CALLS   #5, SYS$FAO                     ; 2731
                                53   50  DO 003BB          MOVL    R0, FAO_ERRCODE                 ;
                                07   53  E8 003BE          BLBS    FAO_ERRCODE, 52$                ;
                                     53  DD 003C1          PUSHL   FAO_ERRCODE                     ; 2734
                                6B   01  FB 003C3          CALLS   #1, FAOFAIL                     ;
                                     0E  11 003C6          BRB     54$                             ;
                                7E   67  3C 003C8 52$:     MOVZWL  OUTSIZE, -(SP)                  ; 2737
```

```
                        FF74    C7  9F 003CB             PUSHAB  OUTLINE
                    69          02  FB 003CF             CALLS   #2, LNK$MAPOUT
                    01          50  E8 003D2 53$:        BLBS    R0, 54$
                                04  003D5               RET
                    52          68  9E 003D6 54$:        MOVAB   BLANKS, VALUE2                  ;2745
                    55      FF7C    C8  9E 003D9         MOVAB   IMGATRLINE, FAO_CTL_PTR         ;2746
                05 00000000G    00  01  E1 003DE         BBC     #1, LNK$GL_CTLMSK, 55$          ;2748
                    54      0082    C8  9E 003E6         MOVAB   EXEIMAGE, VALUE1                ;2750
                05 00000000G    00  03  E1 003EB 55$:     BBC     #3, LNK$GL_CTLMSK, 56$          ;2752
                    54      008D    C8  9E 003F3         MOVAB   SYSIMAGE, VALUE1                ;2754
                52 00000000G    00  02  E1 003F8 56$:     BBC     #2, LNK$GL_CTLMSK, 63$          ;2756
                    55        D4    A8  9E 00400         MOVAB   IMGSHRLINE, FAO_CTL_PTR         ;2759
                06 00000000G    00  01  E1 00404         BBC     #1, LNK$GL_CTLMSK+2, 57$        ;2761
                    54        0A    A8  9E 0040C         MOVAB   PIC, VALUE1
                                04  11  00410           BRB     58$
                    54        46    A8  9E 00412 57$:     MOVAB   NOPIC, VALUE1
                    52      0094    C8  9E 00416 58$:     MOVAB   SHRIMAGE, VALUE2                ;2763
                    51 00000000G    00  D0 0041B         MOVL    LNK$GB_MATCHCTL, R1             ;2764
                                07  12  00422           BNEQ    59$                             ;2766
                    50      00A5    C8  9E 00424         MOVAB   ALLTIME, VALUE3
                                27  11  00429           BRB     63$
                    03              51  D1 0042B 59$:     CMPL    R1, #3                          ;2767
                                07  12  0042E           BNEQ    60$
                    50      00AC    C8  9E 00430         MOVAB   NEVER, VALUE3
                                1B  11  00435           BRB     63$
                    01              51  D1 00437 60$:     CMPL    R1, #1                          ;2768
                                07  12  0043A           BNEQ    61$
                    50      00B2    C8  9E 0043C         MOVAB   EQUAL, VALUE3
                                0F  11  00441           BRB     63$
                    02              51  D1 00443 61$:     CMPL    R1, #2                          ;2769
                                07  12  00446           BNEQ    62$
                    50      00B8    C8  9E 00448         MOVAB   LSSEQUAL, VALUE3
                                03  11  0044D           BRB     63$
                    50              68  9E 0044F 62$:     MOVAB   BLANKS, VALUE3                  ;2770
 7E 00000000G   00      18          00  EF 00452 63$:     EXTZV   #0, #24, LNK$GL_MATCHID, -(SP)  ;2780
                    7E 00000000G    00  9A 00458         MOVZBL  LNK$GL_MATCHID+3, -(SP)
                                50  DD 00462           PUSHL   VALUE3
                                52  DD 00464           PUSHL   VALUE2
                                54  DD 00466           PUSHL   VALUE1
                            F8      A7  9F 00468         PUSHAB  OUTDES
                          00A0      8F  BB 0046B         PUSHR   #^M<R5,R7>
                    6A              08  FB 0046F         CALLS   #8, SYS$FAO
                    53              50  D0 00472         MOVL    R0, FAO_ERRCODE
                    07              53  E8 00475         BLBS    FAO_ERRCODE, 64$
                                    53  DD 00478         PUSHL   FAO_ERRCODE                     ;2783
                    6B              01  FB 0047A         CALLS   #1, FAOFAIL
                                0D  11  0047D           BRB     65$
                    7E              67  3C 0047F 64$:     MOVZWL  OUTSIZE, -(SP)                  ;2786
                        FF74        C7  9F 00482         PUSHAB  OUTLINE
                    69              02  FB 00486         CALLS   #2, LNK$MAPOUT
                    62              50  E9 00489         BLBC    R0, 72$
          07 00000000G      00      01  E1 0048C 65$:     BBC     #1, LNK$GL_CTLMSK+1, 66$        ;2794
                    54      009F    C8  9E 00494         MOVAB   BRIEFMAP, VALUE1                ;2796
                                13  11  00499           BRB     68$
                    07 00000000G    00  E9 0049B 66$:     BLBC    LNK$GL_CTLMSK+1, 67$            ;2799
                    54      00CB    C8  9E 004A2         MOVAB   LONGMAP, VALUE1                 ;2801
                                05  11  004A7           BRB     68$
```

```
54      00C3   C8  9E 004A9 67$:    MOVAB   DEFAULTMAP, VALUE1                  ; 2803
    00000000G  00  95 004AE 68$:    TSTB    LNK$GL_CTLMSK                       ; 2805
               07  18 004B4        BGEQ    69$                                 ;
52      00D0   C8  9E 004B6        MOVAB   CREFMAP, VALUE2                     ; 2807
               03  11 004BB        BRB     70$                                 ;
52             68  9E 004BD 69$:    MOVAB   BLANKS, VALUE2                      ; 2809
          04   A6  DD 004C0 70$:    PUSHL   4(R6)                               ; 2812
7E        03   A6  9A 004C3        MOVZBL  3(R6), -(SP)                        ;
               52  DD 004C7        PUSHL   VALUE2                              ; 2811
               54  DD 004C9        PUSHL   VALUE1                              ;
          F8   A7  9F 004CB        PUSHAB  OUTDES                              ;
               57  DD 004CE        PUSHL   R7                                  ;
        FC38   C8  9F 004D0        PUSHAB  MAPFORMAT                           ;
6A             07  FB 004D4        CALLS   #7, SYS$FAO                         ;
53             50  D0 004D7        MOVL    R0, FAO_ERRCODE                     ;
07             53  E8 004DA        BLBS    FAO_ERRCODE, 71$                    ;
               53  DD 004DD        PUSHL   FAO_ERRCODE                         ; 2814
6B             01  FB 004DF        CALLS   #1, FAOFAIL                         ;
               0D  11 004E2        BRB     73$                                 ;
7E             67  3C 004E4 71$:    MOVZWL  OUTSIZE, -(SP)                      ; 2817
        FF74   C7  9F 004E7        PUSHAB  OUTLINE                             ;
69             02  FB 004EB        CALLS   #2, LNK$MAPOUT                      ;
4B             50  E9 004EE 72$:    BLBC    R0, 76$                             ;
          6C   A7  DD 004F1 73$:    PUSHL   MAPESTIM                            ; 2821
          F8   A7  9F 004F4        PUSHAB  OUTDES                              ;
               57  DD 004F7        PUSHL   R7                                  ;
        FC68   C8  9F 004F9        PUSHAB  MAPLENGTH                           ;
6A             04  FB 004FD        CALLS   #4, SYS$FAO                         ;
53             50  D0 00500        MOVL    R0, FAO_ERRCODE                     ;
07             53  E8 00503        BLBS    FAO_ERRCODE, 74$                    ;
               53  DD 00506        PUSHL   FAO_ERRCODE                         ; 2823
6B             01  FB 00508        CALLS   #1, FAOFAIL                         ;
               0D  11 0050B        BRB     75$                                 ;
7E             67  3C 0050D 74$:    MOVZWL  OUTSIZE, -(SP)                      ; 2826
        FF74   C7  9F 00510        PUSHAB  OUTLINE                             ;
69             02  FB 00514        CALLS   #2, LNK$MAPOUT                      ;
22             50  E9 00517        BLBC    R0, 76$                             ;
    00000000'  EF  9F 0051A 75$:    PUSHAB  LNK$GQ_ENDTIM                       ; 2831
00000000G  00      01  FB 00520        CALLS   #1, SYS$GETTIM                      ;
        02C4   C8  9F 00527        PUSHAB  LINKSTATS                           ; 2836
00000000V  EF      01  FB 0052B        CALLS   #1, MAPBOX                          ;
               07  50  E9 00532        BLBC    R0, 76$                             ;
00000000G  00          00  FB 00535        CALLS   #0, LNK$STATSOUT                    ; 2838
                       04  0053C 76$:    RET                                         ; 2840

; Routine Size:  1341 bytes,    Routine Base:  $CODE$ + 0FD0

; 2290          2841  1
```

```
;  2292          2842  1 routine mapbox (addr) =                        ! OUTPUT HEADER IN A BOX
;  2293          2843  1
;  2294          2844  1 !++
;  2295          2845  1 ! FUNCTIONAL DESCRIPTION:
;  2296          2846  1 !
;  2297          2847  1 !       THIS ROUTINE OUTPUTS A HEADER CONTAINED IN A BOX AND FOLLOWED BY
;  2298          2848  1 !       A BLANK LINE.
;  2299          2849  1 !
;  2300          2850  1 ! FORMAL PARAMETERS:
;  2301          2851  1 !
;  2302          2852  1 !       ADDR -- THE ADDRESS OF THE HEADER  AN ASCIC STRING CONTAINING THE
;  2303          2853  1 !                 SIDES OF THE BOX
;  2304          2854  1 !
;  2305          2855  1 ! IMPLICIT INPUTS:
;  2306          2856  1 !
;  2307          2857  1 !       THE BOXED HEADER IS WRITTEN TO THE MAP AND FOLLOWED BY A BLANK LINE.
;  2308          2858  1 !
;  2309          2859  1 ! IMPLICIT OUTPUTS:
;  2310          2860  1 !
;  2311          2861  1 !       NONE
;  2312          2862  1 !
;  2313          2863  1 ! ROUTINE VALUE:
;  2314          2864  1 !
;  2315          2865  1 !       NOVALUE
;  2316          2866  1 !
;  2317          2867  1 ! COMPLETION CODES:
;  2318          2868  1 !
;  2319          2869  1 !       NONE
;  2320          2870  1 !
;  2321          2871  1 ! SIDE EFFECTS:
;  2322          2872  1 !
;  2323          2873  1 !       NONE
;  2324          2874  1 !
;  2325          2875  1 !--
;  2326          2876  2     begin
;  2327          2877  2
;  2328          2878  2     map
;  2329          2879  2         addr : ref vector [, byte];              ! REFERENCE A COUNTED ASCII STRING
;  2330          2880  2
;  2331          2881  2     local
;  2332          2882  2         outsiz : word,                           ! OUTPUT LINE SIZE
;  2333          2883  2         chpntr : long,                           ! CHARACTER POINTER FOR OUTPUT LINE
;  2334          2884  2         boxpntr : long,                          ! CHARACTER POINTER FOR OUTPUT LINE
;  2335          2885  2         outbufr : ch$sequence (len$c_mapline);   ! OUTPUT BUFFER
;  2336          2886  2
;  2337          2887  2     if not .lnk$gl_ctlmsk [lnk$v_mapopn]         ! MAP FILE OPEN?
;  2338          2888  2     then
;  2339          2889  2         return false;                            ! NO, RETURN
;  2340          2890  2
;  2341          2891  2     chpntr = ch$ptr (outbufr);                   ! INITIALIZE CHARACTER POINTER
;  2342          2892  2     outsiz = (len$c_mapline - .addr [0])/2 - 8;  ! COMPUTE NUMBER OF SPACES BEFORE BOX
;  2343          2893  2     chpntr = ch$fill (%c' ', .outsiz, .chpntr);  ! MOVE IN SPACES
;  2344          2894  2     boxpntr = .chpntr;                           ! REMEMBER WHERE BOX STARTS
;  2345          2895  2     chpntr = ch$fill (%c'+', 1, .chpntr);        ! MOVE IN BOX CORNER
;  2346          2896  2     chpntr = ch$fill (%c'-', .addr [0] - 2, .chpntr);   ! MOVE IN TOP OF BOX
;  2347          2897  2     chpntr = ch$fill (%c'+', 1, .chpntr);        ! MOVE IN BOX CORNER
;  2348          2898  2     outsiz = .outsiz + .addr [0];                ! COMPUTE LENGTH OF OUTPUT LINE
```

```
;  2349          2899  2
;  2350          2900  2      if not lnk$mapout (outbufr, .outsiz)        ! OUTPUT TOP OF BOX
;  2351          2901  2      then
;  2352          2902  2          return false;                           ! NO MORE OUTPUT, I/O FAILURE
;  2353          2903  2
;  2354          2904  2      ch$move (.addr [0], addr [1], .boxpntr);    ! MOVE IN TITLE AND BOX SIDES
;  2355          2905  2
;  2356          2906  2      if not lnk$mapout (outbufr, .outsiz)        ! OUTPUT HEADER IN BOX
;  2357          2907  2      then
;  2358          2908  2          return false;                           ! NO MORE OUTPUT, I/O FAILURE
;  2359          2909  2
;  2360          2910  2      chpntr = ch$fill (%c'+', 1, .boxpntr);      ! MOVE IN BOX CORNER
;  2361          2911  2      chpntr = ch$fill (%c'-', .addr [0] - 2, .chpntr);   ! MOVE IN BOTTOM OF BOX
;  2362          2912  2      chpntr = ch$fill (%c'+', 1, .chpntr);       ! MOVE IN BOX CORNER
;  2363          2913  2
;  2364          2914  2      if not lnk$mapout (outbufr, .outsiz)        ! OUTPUT BOTTOM OF BOX
;  2365          2915  2      then
;  2366          2916  2          return false;                           ! NO MORE OUTPUT, I/O FAILURE
;  2367          2917  2
;  2368          2918  2      return true;                                ! SUCCESSFUL RETURN
;  2369          2919  1      end;

                                    0FFC 00000 MAPBOX: .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11      ; 2842
                          5B 00000000V  EF  9E 00002         MOVAB   LNK$MAPOUT, R11                     ;
                          5E     FF7C   CE  9E 00009         MOVAB   -132(SP), SP                        ;
                    03 00000000G  00         05  E0 0000E         BBS     #5, LNK$GL_CTLMSK, 1$          ; 2887
                                        0082  31 00016         BRW     2$                             ;
                          57              6E  9E 00019 1$:     MOVAB   OUTBUFR, CHPNTR                    ; 2891
                          56        04    AC  D0 0001C         MOVL    ADDR, R6                           ; 2892
                          50              66  9A 00020         MOVZBL  (R6), R0                           ;
                          50        FF7C  C0  9E 00023         MOVAB   -132(R0), R0                       ;
                          50              02  C6 00028         DIVL2   #2, R0                             ;
                          59              50  AE 0002B         MNEGW   R0, OUTSIZ                         ;
                          59              08  A2 0002E         SUBW2   #8, OUTSIZ                         ;
                59        20            6E  00  2C 00031       MOVC5   #0, (SP), #32, OUTSIZ, (CHPNTR)    ; 2893
                                              67    00036                                                ;
                          57              53  D0 00037         MOVL    R3, CHPNTR                         ;
                          58              57  D0 0003A         MOVL    CHPNTR, BOXPNTR                    ; 2894
                          87              2B  90 0003D         MOVB    #43, (CHPNTR)+                     ; 2895
                          5A              66  9A 00040         MOVZBL  (R6), R10                          ; 2896
                          5A              02  C2 00043         SUBL2   #2, R10                            ;
                5A        2D            6E  00  2C 00046       MOVC5   #0, (SP), #45, R10, (CHPNTR)       ;
                                              67    0004B                                                ;
                          57              53  D0 0004C         MOVL    R3, CHPNTR                         ;
                          87              2B  90 0004F         MOVB    #43, (CHPNTR)+                     ; 2897
                          50              66  9A 00052         MOVZBL  (R6), R0                           ; 2898
                          59              50  A0 00055         ADDW2   R0, OUTSIZ                         ;
                          7E              59  3C 00058         MOVZWL  OUTSIZ, -(SP)                      ; 2900
                                    04    AE  9F 0005B         PUSHAB  OUTBUFR                            ;
                          6B              02  FB 0005E         CALLS   #2, LNK$MAPOUT                     ;
                          37              50  E9 00061         BLBC    R0, 2$                             ;
                          50              66  9A 00064         MOVZBL  (R6), R0                           ; 2904
                    68        01    A6        50  28 00067       MOVC3   R0, 1(R6), (BOXPNTR)               ;
```

```
                        7E              59  3C  0006C         MOVZWL  OUTSIZ, -(SP)                                   ;2906
                    04  AE              9F  0006F             PUSHAB  OUTBUFR
                    6B                  02  FB  00072         CALLS   #2, LNK$MAPOUT
                    23                  50  E9  00075         BLBC    R0, 2$
                    68                  2B  90  00078         MOVB    #43, (BOXPNTR)                              ;2910
                    57              01  A8  9E  0007B         MOVAB   1(R8), CHPNTR
          5A        2D                  6E  00  2C  0007F     MOVC5   #0, (SP), #45, R10, (CHPNTR)                ;2911
                                            67      00084
                    57                  53  D0  00085         MOVL    R3, CHPNTR
                    87                  2B  90  00088         MOVB    #43, (CHPNTR)+                              ;2912
                    7E                  59  3C  0008B         MOVZWL  OUTSIZ, -(SP)                               ;2914
                    04  AE              9F  0008E             PUSHAB  OUTBUFR
                    6B                  02  FB  00091         CALLS   #2, LNK$MAPOUT
                    04                  50  E9  00094         BLBC    R0, 2$
                    50                  01  D0  00097         MOVL    #1, R0                                      ;2918
                                            04  0009A         RET
                                        50  D4  0009B 2$:     CLRL    R0                                          ;2919
                                            04  0009D         RET

; Routine Size:  158 bytes,    Routine Base:  $CODE$ + 150D
```

```
;  2371          2920  1 routine lnk$crfout (linedesc) =
;  2372          2921  2     begin
;  2373          2922  2
;  2374          2923  2 !++
;  2375          2924  2 !       THIS ROUTINE IS CALLED BY CROSS REFERENCE TO OUTPUT
;  2376          2925  2 !       EACH LINE OF THE CROSS REFERENCE.
;  2377          2926  2 !
;  2378          2927  2 ! INPUTS:
;  2379          2928  2 !
;  2380          2929  2 !       LINEDESC        ADDRESS OF A STRING DESCRIPTOR FOR THE LINE
;  2381          2930  2 !
;  2382          2931  2 !--
;  2383          2932  2
;  2384          2933  2     map
;  2385          2934  2         linedesc : ref block [, byte];
;  2386          2935  2
;  2387          2936  2     return lnk$mapout (.linedesc [dsc$a_pointer], .linedesc [dsc$w_length])
;  2388          2937  1     end;                                          ! OF LNK$CRFOUT

                                        0000 00000 LNK$CRFOUT:
                                                           .WORD   Save nothing                    ;  2920
                          50      04    AC  D0 00002       MOVL    LINEDESC, R0                    ;  2936
                          7E            60  3C 00006       MOVZWL  (R0), -(SP)
                                  04    A0  DD 00009       PUSHL   4(R0)
                00000000V EF            02  FB 0000C       CALLS   #2, LNK$MAPOUT
                                        04 00013           RET                                     ;  2937

; Routine Size:  20 bytes,    Routine Base:  $CODE$ + 15AB

;  2389          2938  1
```

```
;  2391          2939  1 global routine lnk$mapout (addr, length) =
;  2392          2940  1                                          ! CONDITIONALLY OUTPUT A LINE OF THE MAP, CHECKING FOR NEW PAGE
;  2393          2941  1
;  2394          2942  1 !++
;  2395          2943  1 ! FUNCTIONAL DESCRIPTION:
;  2396          2944  1 !
;  2397          2945  1 !       THIS ROUTINE OUTPUTS A LINE OF DATA TO THE MAP FILE.  IT ALSO
;  2398          2946  1 !       INSERTS A NEW PAGE AND THE APPROPRIATE HEADERS WHENEVER NEEDED.
;  2399          2947  1 !
;  2400          2948  1 ! FORMAL PARAMETERS:
;  2401          2949  1 !
;  2402          2950  1 !       ADDR -- ADDRESS OF THE ASCII STRING TO BE OUTPUT
;  2403          2951  1 !       LENGTH -- LENGTH OF THE ASCII STRING TO BE OUTPUT
;  2404          2952  1 !
;  2405          2953  1 ! IMPLICIT INPUTS:
;  2406          2954  1 !
;  2407          2955  1 !       THE MAP FILE MUST BE ALREADY OPEN.
;  2408          2956  1 !
;  2409          2957  1 ! IMPLICIT OUTPUTS:
;  2410          2958  1 !
;  2411          2959  1 !       THE OUTPUT LINE IS WRITTEN TO THE MAP FILE.  THE PAGE COUNTER IS INCREMENTED.
;  2412          2960  1 !       IF THE CURRENT PAGE IS FULL, A NEW PAGE WITH HEADER LINES IS OUTPUT
;  2413          2961  1 !       BEFORE THE CURRENT OUTPUT LINE.
;  2414          2962  1 !
;  2415          2963  1 !
;  2416          2964  1 ! ROUTINE VALUE:
;  2417          2965  1 !
;  2418          2966  1 !       NOVALUE
;  2419          2967  1 !
;  2420          2968  1 ! COMPLETION CODES:
;  2421          2969  1 !
;  2422          2970  1 !       NONE
;  2423          2971  1 !
;  2424          2972  1 ! SIDE EFFECTS:
;  2425          2973  1 !
;  2426          2974  1 !       NONE
;  2427          2975  1 !
;  2428          2976  1 !--
;  2429          2977  2     begin
;  2430          2978  2
;  2431          2979  2     map
;  2432          2980  2         addr : ref vector [, byte];             ! REFERENCE AN OUTPUT BUFFER
;  2433          2981  2
;  2434          2982  2     literal
;  2435          2983  2         lfchar = 10;                            ! LITERAL VALUE OF LINEFEED
;  2436          2984  2
;  2437          2985  2     local
;  2438          2986  2         blength,
;  2439          2987  2         bptr,
;  2440          2988  2         eptr,
;  2441          2989  2         lptr;
;  2442          2990  2
;  2443          2991  2 !
;  2444          2992  2
;  2445          2993  2     if not .lnk$gl_ctlmsk [lnk$v_manopn]        ! IF THE MAP FILE IS NO LONGER
;  2446          2994  2     then
;  2447          2995  2         return true;                            ! OPEN, RETURN IMMEDIATELY
```

```
;  2448          2996  2
;  2449          2997  2      if .linecnt geq .lnk$gb_linespp              ! CHECK IF A NEW PAGE IS NEEDED
;  2450          2998  2      then
;  2451          2999  2
;  2452          3000  2          if not newpage () then return false;     ! AND OUTPUT IT IF SO GIVING UP ON FAILURE
;  2453          3001  2
;  2454          3002  2      if not (rmserror = $wait (rab = maprab))     ! WAIT FOR POSSIBLE PREVIOUS
;  2455          3003  2      then
;  2456          3004  3          begin                                    ! OUTPUT AND
;  2457          3005  3          mapfail ();                              ! REPORT ANY ERROR
;  2458          3006  3          return false;                            ! GIVING UP ON IT
   2459          3007  2          end;
;  2460          3008  2
;  2461          3009  2      bptr = .addr;                                ! POINT TO START OF STRING
;  2462          3010  2      eptr = .bptr + .length;                      ! COMPUTE END OF STRING
;  2463          3011  2      blength = .length;
;  2464          3012  2
;  2465          3013  3      while not (ch$fail (lptr = ch$find_ch (.blength, .bptr, lfchar)))   ! LOOK FOR MULTI-LINE OUTPUT
;  2466          3014  2      do
;  2467          3015  3          begin
;  2468          3016  3
;  2469          3017  3          if not lnk$mapout (.bptr, .lptr - .bptr - 1)    ! WRITE OUT THE LINE
;  2470          3018  3          then
;  2471          3019  3              return false;
;  2472          3020  3
;  2473          3021  3          blength = .blength - (.lptr - .bptr + 1);       ! UPDATE LENGTH LEFT TO WRITE
;  2474          3022  3          bptr = .lptr + 1;
;  2475          3023  3
;  2476          3024  3          if .bptr geqa .eptr then return true;
;  2477          3025  3
;  2478          3026  2          end;
;  2479          3027  2
;  2480          3028  2      maprab [rab$l_rbf] = .bptr;                  ! SET THE RECORD ADDRESS IN RAB
;  2481          3029  2      maprab [rab$w_rsz] = .blength;               ! AND THE RECORD LENGTH
;  2482          3030  2
;  2483          3031  3      if not (rmserror = $put (rab = maprab))      ! AND OUTPUT IT
;  2484          3032  2      then
;  2485          3033  3          begin                                    ! BUT IF AN ERROR REPORT
;  2486          3034  3          mapfail ();                              ! IT NOW AND
;  2487          3035  3          return .rmserror;                        ! AND GIVE UP
;  2488          3036  2          end;
;  2489          3037  2
;  2490          3038  2      linecnt = .linecnt + 1;                      ! INCREMENT NUMBER OF LINES OUTPUT ON CURRENT PAGE
;  2491          3039  2      return true;                                 ! REPORT SUCCESS
;  2492          3040  1      end;


                                                                  .EXTRN  SYS$PUT

                                                01FC 00000        .ENTRY  LNK$MAPOUT, Save R2,R3,R4,R5,R6,R7,R8        ; 2939
                                    58     EC5D CF   9E 00002    MOVAB   MAPFAIL, R8                                  ;
                                    57 00000000' EF   9E 00007    MOVAB   RMSERROR, R7                                 ;
                          67 00000000G  00       05   E1 0000E    BBC     #5, LNK$GL_CTLMSK, 5$                        ; 2993
      AC    A7 00000000'  EF            08       00   ED 00016    CMPZV   #0, #8, LNR$GB_LINESPP, LINECNT              ; 2997
                                                  0A   14 00020    BGTR    1$                                           ;
                          00000000V     EF       00   FB 00022    CALLS   #0, NEWPAGE                                  ; 3000
```

```
                        79          50  E9 00029          BLBC    R0, 9$                                  ;
                    04  A7  9F 0002C 1$:                  PUSHAB  MAPRAB                                  ; 3002
          00000000G     00          01  FB 0002F          CALLS   #1, SYS$WAIT                            ;
                        67          50  D0 00036          MOVL    R0, RMSERROR                            ;
                        05          50  E8 00039          BLBS    R0, 2$                                  ;
                        68          00  FB 0003C          CALLS   #0, MAPFAIL                             ; 3005
                                    64  11 0003F          BRB     9$                                      ; 3006
                        54      04  AC  D0 00041 2$:      MOVL    ADDR, BPTR                              ; 3009
                    56  54      08  AC  C1 00045          ADDL3   LENGTH, BPTR, EPTR                      ; 3010
                        52      08  AC  D0 0004A          MOVL    LENGTH, BLENGTH                         ; 3011
                    64  52          0A  3A 0004E 3$:      LOCC    #10, BLENGTH, (BPTR)                    ; 3013
                                    02  12 00052          BNEQ    4$                                      ;
                                    51  D4 00054          CLRL    R1                                      ;
                        55          51  D0 00056 4$:      MOVL    R1, LPTR                                ;
                                    24  13 00059          BEQL    6$                                      ;
                    53  55          54  C3 0005B          SUBL3   BPTR, LPTR, R3                          ; 3017
                            FF      A3  9F 0005F          PUSHAB  -1(R3)                                  ;
                                    54  DD 00062          PUSHL   BPTR                                    ;
                          139D      C8  02 FB 00064       CALLS   #2, LNK$MAPOUT                          ;
                                    39  50 E9 00069       BLBC    R0, 9$                                  ;
                    50  52          52  53 C3 0006C       SUBL3   R3, BLENGTH, R0                         ; 3021
                        52      FF  A0  9E 00070          MOVAB   -1(R0), BLENGTH                         ;
                        54      01  A5  9E 00074          MOVAB   1(R5), BPTR                             ; 3022
                        56          54  D1 00078          CMPL    BPTR, EPTR                              ; 3024
                                    D1  1F 0007B          BLSSU   3$                                      ;
                                    22  11 0007D 5$:       BRB     8$                                      ;
                             2C     A7  54  D0 0007F 6$:   MOVL    BPTR, MAPRAB+40                         ; 3028
                             26     A7  52  B0 00083       MOVW    BLENGTH, MAPRAB+34                      ; 3029
                            04      A7  9F  00087          PUSHAB  MAPRAB                                  ; 3031
          00000000G     00          01  FB 0008A          CALLS   #1, SYS$PUT                             ;
                        67          50  D0 00091          MOVL    R0, RMSERROR                            ;
                        07          50  E8 00094          BLBS    R0, 7$                                  ;
                        68          00  FB 00097          CALLS   #0, MAPFAIL                             ; 3034
                        50          67  D0 0009A          MOVL    RMSERROR, R0                            ; 3035
                                        04 0009D          RET                                             ;
                                AC  A7  D6 0009E 7$:      INCL    LINECNT                                 ; 3038
                        50          01  D0 000A1 8$:      MOVL    #1, R0                                  ; 3039
                                        04 000A4          RET                                             ;
                                    50  D4 000A5 9$:      CLRL    R0                                      ; 3040
                                        04 000A7          RET                                             ;

; Routine Size:  168 bytes,    Routine Base:  $CODE$ + 15BF

; 2493          3041  1
```

```
;  2495     3042  1 routine mapsubhdr (subhdrdsc, arg1) =           ! OUTPUT PAGE SUB HEADING
;  2496     3043  2     begin
;  2497     3044  2
;  2498     3045  2 !++
;  2499     3046  2 ! FUNCTIONAL DESCRIPTION:
;  2500     3047  2 !
;  2501     3048  2 !       THIS ROUTINE BUILDS A SUB-HEADER TITLE AND OUTPUTS IT TO THE MAP
;  2502     3049  2 !       FILE.  IT INITIALIZES THE AUTOMATIC MAP SUB-HEADER GENERATION.
;  2503     3050  2 !
;  2504     3051  2 ! FORMAL PARAMETERS:
;  2505     3052  2 !
;  2506     3053  2 !       SUBHDRDSC -- ADDRESS OF 2 FAO CONTROL STRING DESCRIPTORS FOR THE SUB-HEADER
;  2507     3054  2 !                    WHICH IS ASSUMED TO BE TWO LINES LONG,
;  2508     3055  2 !                    CONSISTING OF UNDERLINED COLUMN HEADERS
;  2509     3056  2 !       ARG1 -- FAO ARGUMENT FOR SUBHEADER WHICH WAS TOO LONG TO MAKE ONE
;  2510     3057  2 !                    COUNTED ASCII STRING
;  2511     3058  2 !
;  2512     3059  2 ! IMPLICIT INPUTS:
;  2513     3060  2 !
;  2514     3061  2 !       NONE
;  2515     3062  2 !
;  2516     3063  2 ! IMPLICIT OUTPUTS:
;  2517     3064  2 !
;  2518     3065  2 !       THE SUBHEADER IS SET UP AND WRITTEN TO THE MAP FILE.  IT IS
;  2519     3066  2 !       STORED AS POSSIBLE OUTPUT ON FUTURE PAGES.  SUBHDLINE IS
;  2520     3067  2 !       INITIALIZED TO CAUSE AUTOMATIC SUB-HEADER GENERATION.  A BLANK
;  2521     3068  2 !       LINE IS OUTPUT FOLLOWING THE SUB-HEADER LINE.
;  2522     3069  2 !
;  2523     3070  2 ! ROUTINE VALUE:
;  2524     3071  2 !
;  2525     3072  2 !       NOVALUE
;  2526     3073  2 !
;  2527     3074  2 ! COMPLETION CODES:
;  2528     3075  2 !
;  2529     3076  2 !       NONE
;  2530     3077  2 !
;  2531     3078  2 ! SIDE EFFECTS:
;  2532     3079  2 !
;  2533     3080  2 !       NONE
;  2534     3081  2 !--
;  2535     3082  2     own
;  2536     3083  2         extra_fao_arg;                          ! REMEMBER PREVIOUS VALUE OF ARG1
;  2537     3084  2
;  2538     3085  2     builtin
;  2539     3086  2         actualcount;
;  2540     3087  2
;  2541     3088  2     map
;  2542     3089  2         subhdrdsc : ref vector;                 ! POINTER TO DESCRIPTOR VECTOR
;  2543     3090  2
;  2544     3091  2     local
;  2545     3092  2         fao_errcode,                            ! FAO ERROR CODE
;  2546     3093  2         subheadlng,                             ! LENGTH OF FORMATTED LINE (RETURNED BY FAO)
;  2547     3094  2         subheadbuf : ch$sequence (len$c_mapline),       ! BUFFER FILLED BY FAO
;  2548     3095  2         subheadbufdsc : vector [2];             ! DESCRIPTOR OF ABOVE BUFFER
;  2549     3096  2
;  2550     3097  2     if .subhdrdsc eql 0 then return true;       ! IF THERE IS NONE,RETURN
;  2551     3098  2
```

```
;  2552          3099  2     if actualcount () eql 2                    ! IF A SECOND ARGUMENT PRESENT,
;  2553          3100  2     then
;  2554          3101  2         extra_fao_arg = .arg1;                 ! REMEMBER FOR NEXT TIME
;  2555          3102  2
;  2556          3103  2     subheadbufdsc [0] = len$c_mapline;         ! INITIALIZE THE BUFFER DESCRIPTOR
;  2557          3104  2     subheadbufdsc [1] = subheadbuf;            ! FOR CALL TO FAO
;  2558          3105  2
;  2559          3106  2     if not lnk$mapout (subheadbuf, 0)          ! SKIP A LINE
;  2560          3107  2     then
;  2561          3108  2         return false;
;  2562          3109  2
;  2563          3110  2     incr i from 0 to 2 by 2                    ! LOOP TO DO BOTH LINES
;  2564          3111  2         do
;  2565          3112  3         begin
;  2566          3113  3
;  2567          3114  4         if not (fao_errcode = sys$fao (subhdrdsc [.i], subheadlng, subheadbufdsc, .extra_fao_arg))
;  2568          3115  4                                                ! FORMAT THE NEXT LINE
;  2569          3116  3         then
;  2570          3117  3             faofail (.fao_errcode);
;  2571          3118  3
;  2572          3119  3         if not lnk$mapout (subheadbuf, .subheadlng)     ! OUTPUT IT
;  2573          3120  3         then
;  2574          3121  3             return false;                      ! EXITING IF FAILURE
;  2575          3122  3
;  2576          3123  2         end;                                   ! END LOOP TO INSERT SUBHEADER
;  2577          3124  2
;  2578          3125  2     subhdline = .subhdrdsc;                    ! SET A SUBHEADER ADDRESS
;  2579          3126  2     return true;                               ! SUCCESSFUL RETURN
;  2580          3127  1     end;

                                        .PSECT  $OWN$,NOEXE,2

                              0025A     .BLKB   2
                              0025C EXTRA_FAO_ARG:
                                        .BLKB   4


                                        .PSECT  $CODE$,NOWRT,2

                                007C 00000 MAPSUBHDR:
                                        .WORD   Save R2,R3,R4,R5,R6                             ;  3042
                    56 00000000'    EF  9E 00002        MOVAB   EXTRA_FAO_ARG, R6               ;
                    55      FF4B    CF  9E 00009        MOVAB   LNK$MAPOUT, R5                  ;
                    5E      FF70    CE  9E 0000E        MOVAB   -144(SP), SP                    ;
                    53        04    AC  D0 00013        MOVL    SUBHDRDSC, R3                   ;  3097
                                    55  13 00017        BEQL    4$                              ;
                    02              6C  91 00019        CMPB    (AP), #2                        ;  3099
                                    04  12 0001C        BNEQ    1$                              ;
                    66        08    AC  D0 0001E        MOVL    ARG1, EXTRA_FAO_ARG             ;  3101
              04    AE        84    8F  9A 00022 1$:    MOVZBL  #132, SUBHEADBUFDSC             ;  3103
              08    AE        0C    AE  9E 00027        MOVAB   SUBHEADBUF, SUBHEADBUFDSC+4     ;  3104
                                    7E  D4 0002C        CLRL    -(SP)                           ;  3106
                              10    AE  9F 0002E        PUSHAB  SUBHEADBUF                      ;
                    65              02  FB 00031        CALLS   #2, LNK$MAPOUT                  ;
```

```
                                3B              50  E9 00034          BLBC    R0, 5$                                  ;
                                                52  D4 00037          CLRL    I                                       ; 3110
                                                66  DD 00039 2$:      PUSHL   EXTRA_FAO_ARG                           ; 3114
                                            08  AE  9F 0003B          PUSHAB  SUBHEADBUFDSC                           ;
                                            08  AE  9F 0003E          PUSHAB  SUBHEADLNG                              ;
                                          6342  DF 00041          PUSHAL  (R3)[I]                                 ;
                        00000000G       00      04  FB 00044          CALLS   #4, SYS$FAO                             ;
                                        54      50  D0 0004B          MOVL    R0, FAO_ERRCODE                         ;
                                        07      54  E8 0004E          BLBS    FAO_ERRCODE, 3$                         ;
                                                54  DD 00051          PUSHL   FAO_ERRCODE                             ; 3117
                                    EC39    C5      01  FB 00053          CALLS   #1, FAOFAIL                             ;
                                                6E  DD 00058 3$:      PUSHL   SUBHEADLNG                              ; 3119
                                            10  AE  9F 0005A          PUSHAB  SUBHEADBUF                              ;
                                        65      02  FB 0005D          CALLS   #2, LNK$MAPOUT                          ;
                                        0F      50  E9 00060          BLBC    R0, 5$                                  ;
                FFD0            52      02      02  F1 00063          ACBL    #2, #2, I, 2$                           ; 3110
                                    FE68    C6      53  D0 00069          MOVL    R3, SUBHDLINE                           ; 3125
                                        50      01  D0 0006E 4$:      MOVL    #1, R0                                  ; 3126
                                                04  00071          RET                                             ;
                                                50  D4 00072 5$:      CLRL    R0                                      ; 3127
                                                04  00074          RET                                             ;

; Routine Size:  117 bytes,    Routine Base:  $CODE$ + 1667
```

```
;  2582          3128  1 routine newpage =                          ! OUTPUT NEW PAGE, ITS HEADING AND SUBHEADER
;  2583          3129  1
;  2584          3130  1 !++
;  2585          3131  1 ! FUNCTIONAL DESCRIPTION:
;  2586          3132  1 !
;  2587          3133  1 !       THIS ROUTINE OUTPUTS A FORM FEED AND THE MAP HEADER LINE.  IT
;  2588          3134  1 !       CONDITIONALLY OUTPUTS A SUB-HEADER LINE.  BALNK LINES FOLLOW
;  2589          3135  1 !       THE HEADERS.
;  2590          3136  1 !
;  2591          3137  1 ! FORMAL PARAMETERS:
;  2592          3138  1 !
;  2593          3139  1 !       NONE
;  2594          3140  1 !
;  2595          3141  1 ! IMPLICIT INPUTS:
;  2596          3142  1 !
;  2597          3143  1 !       NONE
;  2598          3144  1 !
;  2599          3145  1 ! IMPLICIT OUTPUTS:
;  2600          3146  1 !
;  2601          3147  1 !       A NEW PAGE WITH THE APPROPRIATE HEADERS IS WRITTEN TO THE MAP FILE.
;  2602          3148  1 !
;  2603          3149  1 ! ROUTINE VALUE:
;  2604          3150  1 !
;  2605          3151  1 !       NOVALUE
;  2606          3152  1 !
;  2607          3153  1 ! COMPLETION CODES:
;  2608          3154  1 !
;  2609          3155  1 !       NONE
;  2610          3156  1 !
;  2611          3157  1 ! SIDE EFFECTS:
;  2612          3158  1 !
;  2613          3159  1 !       NONE
;  2614          3160  1 !
;  2615          3161  1 !--
;  2616          3162  2     begin
;  2617          3163  2
;  2618          3164  2     local
;  2619          3165  2         fao_errcode,                         ! FAO ERROR CODE
;  2620          3166  2         hdrdsc : vector [2],                 ! HEADER BUFFER DESCRIPTOR
;  2621          3167  2         hdrbuf : ch$sequence [len$c_mapline], ! HEADER BUFFER
;  2622          3168  2         hdrsiz;                              ! HEADER LINE LENGTH FROM FAO
;  2623          3169  2
;  2624          3170  2 !
;  2625          3171  2     linecnt = 0;                             ! RESET COUNT OF LINES ON CURRENT PAGE
;  2626          3172  2     hdrdsc [0] = len$c_mapline;              ! INITIALIZE THE HEADER BUFFER
;  2627          3173  2     hdrdsc [1] = hdrbuf;                     ! DESCRIPTOR FOR FAO
;  2628          3174  2 !
;  2629          3175  2
;  2630          3176  3     if not (fao_errcode = sys$fao (ff_cntrl_str, hdrsiz, hdrdsc))
;  2631          3177  2     then
;  2632          3178  3         begin
;  2633          3179  3         faofail (.fao_errcode);
;  2634          3180  3         return false;
;  2635          3181  2         end;
;  2636          3182  2
;  2637          3183  2     if not lnk$mapout (hdrbuf, .hdrsiz) then return false;
;  2638          3184  2
```

```
; 2639      3185  3     if not (fao_errcode = sys$fao (hdr_cntrl_str, hdrsiz, hdrdsc, imagefilename, lnk$gq_startim,
; 2640      3186  3            maj_ident_lng, lnk$aw_version [lid$w_major], min_ident_lng, lnk$aw_version [lid$w_minor],
; 2641      3187  3            .pagenum))                          ! FORMAT HEADER LINE
; 2642      3188  2     then
; 2643      3189  3         begin
; 2644      3190  3         faofail (.fao_errcode);
; 2645      3191  3         return false;                         ! REPORT ERROR
; 2646      3192  2         end;                                  !
; 2647      3193  2
; 2648      3194  2     pagenum = .pagenum + 1;                   ! COUNT NEW PAGE
; 2649      3195  2
; 2650      3196  2     if not lnk$mapout (hdrbuf, .hdrsiz)       ! OUTPUT MAIN PAGE HEADING
; 2651      3197  2     then
; 2652      3198  2         return false;                         ! GIVING UP ON FAILURE
; 2653      3199  2
; 2654      3200  2     if not lnk$mapout (hdrbuf, 0)             ! SKIP A LINE
; 2655      3201  2     then
; 2656      3202  2         return false;
; 2657      3203  2
; 2658      3204  2     mapsubhdr (.subhdline);                   ! OUTPUT SUB HEADING IF ANY
; 2659      3205  2
; 2660      3206  2     if .psectnameline neq 0                   ! IF PRINTING PSECTS NOW
; 2661      3207  2     then
; 2662      3208  2         lnk$mapout (.psectnameline, len$c_mapline);     !  THEN PRINT SUMMARY FOR CURRENT PSECT
; 2663      3209  2
; 2664      3210  2     return true;                              ! RETURN SUCCESS STATUS
; 2665      3211  1     end;


                    003C 00000 NEWPAGE:.WORD   Save R2,R3,R4,R5                 ; 3128
    55 00000000G    00   9E 00002          MOVAB   SYS$FAO, R5                  ;
    54 00000000'    EF   9E 00009          MOVAB   PAGENUM, R4                  ;
    53      FECF    CF   9E 00010          MOVAB   LNK$MAPOUT, R3               ;
    5E      FF70    CE   9E 00015          MOVAB   -144(SP), SP                 ;
              FC    A4   D4 0001A          CLRL    LINECNT                      ; 3171
F8  AD        84    8F   9A 0001D          MOVZBL  #132, HDRDSC                 ; 3172
FC  AD        04    AE   9E 00022          MOVAB   HDRBUF, HDRDSC+4             ; 3173
              F8    AD   9F 00027          PUSHAB  HDRDSC                       ; 3176
              04    AE   9F 0002A          PUSHAB  HDRSIZ                       ;
    00000000'       EF   9F 0002D          PUSHAB  FF_CNTRL_STR                 ;
    65              03   FB 00033          CALLS   #3, SYS$FAO                  ;
    52              50   D0 00036          MOVL    R0, FAO_ERRCODE              ;
    3B              52   E9 00039          BLBC    FAO_ERRCODE, 1$              ;
                    6E   DD 0003C          PUSHL   HDRSIZ                       ; 3183
              08    AE   9F 0003E          PUSHAB  HDRBUF                       ;
    63              02   FB 00041          CALLS   #2, LNK$MAPOUT               ;
    6C              50   E9 00044          BLBC    R0, 4$                       ;
                    64   DD 00047          PUSHL   PAGENUM                      ; 3187
    00000000G       00   9F 00049          PUSHAB  LNK$AW_VERSION+2             ; 3186
                    02   DD 0004F          PUSHL   #2                           ;
    00000000G       00   9F 00051          PUSHAB  LNK$AW_VERSION               ;
                    02   DD 00057          PUSHL   #2                           ;
    00000000G       00   9F 00059          PUSHAB  LNK$GQ_STARTIM               ; 3185
              40    A4   9F 0005F          PUSHAB  IMAGEFILENAME                ;
```

```
                    F8   AD   9F 00062          PUSHAB  HDRDSC                                  ;
                    20   AE   9F 00065          PUSHAB  HDRSIZ                                  ;
              00000000'  EF   9F 00068          PUSHAB  HDR_CNTRL_STR                           ;
                    65   0A   FB 0006E          CALLS   #10, SYS$FAO                            ; 3186
                    52   50   D0 00071          MOVL    R0, FAO_ERRCODE
                    09   52   E8 00074          BLBS    FAO_ERRCODE, 2$
                         52   DD 00077 1$:      PUSHL   FAO_ERRCODE                             ; 3190
              EC39  C3   01   FB 00079          CALLS   #1, FAOFAIL
                         33   11 0007E          BRB     4$                                      ; 3191
                         64   D6 00080 2$:      INCL    PAGENUM                                 ; 3194
                         6E   DD 00082          PUSHL   HDRSIZ                                  ; 3196
                    08   AE   9F 00084          PUSHAB  HDRBUF
                    63   02   FB 00087          CALLS   #2, LNK$MAPOUT
                    26   50   E9 0008A          BLBC    R0, 4$
                         7E   D4 0008D          CLRL    -(SP)                                   ; 3200
                    08   AE   9F 0008F          PUSHAB  HDRBUF
                    63   02   FB 00092          CALLS   #2, LNK$MAPOUT
                    1B   50   E9 00095          BLBC    R0, 4$
                    04   A4   DD 00098          PUSHL   SUBHDLINE                               ; 3204
              00A8  C3   01   FB 0009B          CALLS   #1, MAPSUBHDR
                    50   48   A4 D0 000A0       MOVL    PSECTNAMELINE, R0                       ; 3206
                         09   13 000A4          BEQL    3$
                    7E   84   8F 9A 000A6       MOVZBL  #132, -(SP)                             ; 3208
                         50   DD 000AA          PUSHL   R0
                    63   02   FB 000AC          CALLS   #2, LNK$MAPOUT
                    50   01   D0 000AF 3$:      MOVL    #1, R0                                  ; 3210
                         04   000B2            RET
                         50   D4 000B3 4$:      CLRL    R0                                      ; 3211
                         04   000B5            RET                                             ;

; Routine Size:  182 bytes,    Routine Base:  $CODE$ + 16DC
```

```
;  2667          3212  1 routine newline =                          ! ROUTINE TO OUTPUT A BLANK LINE
;  2668          3213  1
;  2669          3214  1 !++
;  2670          3215  1 ! FUNCTIONAL DESCRIPTION:
;  2671          3216  1 !
;  2672          3217  1 !       THIS ROUTINE OUTPUTS A BLANK LINE TO THE MAP FILE, UPDATING THE
;  2673          3218  1 !       LINE COUNTER.
;  2674          3219  1 !
;  2675          3220  1 ! FORMAL PARAMETERS:
;  2676          3221  1 !
;  2677          3222  1 !       NONE
;  2678          3223  1 !
;  2679          3224  1 ! IMPLICIT INPUTS:
;  2680          3225  1 !
;  2681          3226  1 !       NONE
;  2682          3227  1 !
;  2683          3228  1 ! IMPLICIT OUTPUTS:
;  2684          3229  1 !
;  2685          3230  1 !       OUTPUTS A BLANK LINE TO THE MAP FILE.
;  2686          3231  1 !       INCREMENTS THE LINE COUNTER.
;  2687          3232  1 !
;  2688          3233  1 ! ROUTINE VALUE:
;  2689          3234  1 !
;  2690          3235  1 !       NOVALUE
;  2691          3236  1 !
;  2692          3237  1 ! COMPLETION CODES:
;  2693          3238  1 !
;  2694          3239  1 !       NONE
;  2695          3240  1 !
;  2696          3241  1 ! SIDE EFFECTS:
;  2697          3242  1 !
;  2698          3243  1 !       NONE
;  2699          3244  1 !
;  2700          3245  1 !--
;  2701          3246  2     begin
;  2702          3247  2
;  2703          3248  2     if not lnk$mapout (outline, 0)              ! OUTPUT A BLANK LINE
;  2704          3249  2     then
;  2705          3250  2         return false;                           ! AND GIVE UP IF IT FAILS
;  2706          3251  2
;  2707          3252  2     return true;                                ! REPORT SUCCESS
;  2708          3253  1     end;


                                    0000 00000 NEWLINE:.WORD    Save nothing                ;  3212
                                7E  D4 00002           CLRL     -(SP)                       ;  3248
                     00000000'  EF  9F 00004           PUSHAB   OUTLINE                     ;
                         FE1E   CF  02 FB 0000A           CALLS    #2, LNK$MAPOUT          ;
                                04  50 E9 0000F           BLBC     R0, 1$                  ;
                                50  01 D0 00012           MOVL     #1, R0                  ;  3252
                                    04 00015           RET                                  ;
                                50  D4 00016 1$:        CLRL     R0                      ;  3253
                                    04 00018           RET                                  ;
```

```
; Routine Size:  25 bytes,    Routine Base:  $CODE$ + 1792

; 2709          3254  1 end
; 2710          3255  1
; 2711          3256  0 eludom


                                                        .EXTRN  LIB$SIGNAL

;                               PSECT SUMMARY

;       Name                    Bytes                           Attributes

;   $PLIT$                        3895  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   $OWN$                          608  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   $GLOBAL$                       212  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   $CODE$                        6059  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   .  ABS  .                        0  NOVEC,NOWRT,NORD ,NOEXE,NOSHR,  LCL,  ABS,  CON,NOPIC,ALIGN(0)



;                           Library Statistics

;                                    -------- Symbols --------      Pages       Processing
;       File                         Total    Loaded   Percent      Mapped      Time

;   _$255$DUA28:[SYSLIB]LIB.L32;1     18619       138         0        1000        00:02.0
;   _$255$DUA28:[LINKER.OBJ]DATBAS.L32;1   538        63        11          28        00:00.8



;                                   COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:LNKMAPRTN/OBJ=OBJ$:LNKMAPRTN MSRC$:LNKMAPRTN/UPDATE=(ENH$:LNKMAPRTN)

; Size:         6059 code + 4715 data bytes
; Run Time:       02:00.2
; Elapsed Time:   04:38.8
; Lines/CPU Min:   1625
; Lexemes/CPU-Min: 22141
; Memory Used:  581 pages
; Compilation Complete
```

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LNKDYNMEM
LIS

LNKMAPRTN
LIS

LINKMSG
LIS

LNKELAPST
LIS

LNKTMGOUT
LIS

LNKDATBAS
LIS

LNKGETCMD
LIS

LNKINI
LIS

LNKERROUT
LIS

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LNKNXTOBJ
LIS

LNKOBJPSI
LIS

LNKOBJFIL
LIS